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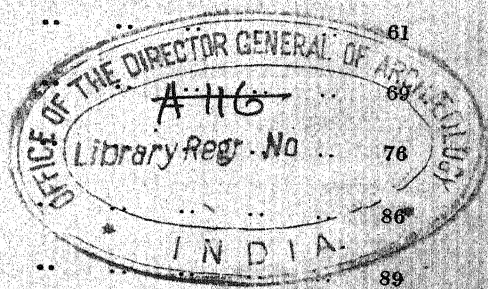
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The Religion of the Rigveda.

YOUR HONOUR, LADIES AND GENTLEMEN,

One of the most important discoveries of the nineteenth century is the startling fact that the Hindus, the Pathans, the Persians and the Armenians of Asia, and the Slavs, the Lithunians, the Greeks, the Latins, the Germans, the Teutons and the Celts of Europe, have all descended from a common stock—the great Aryan race. This conclusion is based on a comparative study of the Anatomy, Language and Religion of these different nations. It appears that at a very ancient time the forefathers of these peoples lived together in the same place, spoke the same language and worshipped the same god or gods. The scholars have not yet agreed as to where they lived and how long ago. As regards the locality of the original home of the Aryan race, according to the Indian authorities, this was in the north-eastern Asia—the *Qveta-dvīpa* (*dvi + apa, Pān.*, country between two waters i.e. rivers) = white (ice-clad) country; also called *Kuru*, (probably the present *Korea* = Chinese *Kwo-li* and Thibetan *Kaoli*, *r* and *l* are interchangeable, *Pān*). In older Korean and Japanese writings *Korea* appears as *Kow-ri* meaning high beauty. It is now called Cho-seng and means fresh-morning. No Sanskrit work gives us the meaning of the word *Kuru* but it is curious to notice that the Rāmāyaṇa speaks of the place as *Udaygiri* meaning the hill of the rising sun. It is in evidence that this home—the प्रतोकः—the old home of the Rigveda and the *Aryana Vaejo*, the seat of the Aryans of the Avesta, was abandoned for two reasons :

(1) It proved too small for men and cattle.

(2) A climatic change took place increasing the cold of the place.

From data partly geological and partly historical connected with the history of the Indu-Aryans, the *Panis* of the Rigveda or the Phœnicians, and of the Akkadians—the ancient people of Babylonia, the probable date of the dispersion of the Aryans appears to be 8000 B.C.

The first question I take up is what was the religion of the Aryan race, in their old home before the different branches separated, and some went to the west and some to the south and others in other directions. But here some persons would stop me by saying that those primitive people had no religion at all. Others again in this connection would mention Animism, Fetish-ism, Mythology, Ancestor-worship, etc., prejudging matters at the very start. I would entreat you not to take any notice of these, but confine yourselves to solid facts. The fact that has been discovered is simply this : The *Dyauspita* of the Rigveda is the same as the Greek *Zeus pater* and the Latin *Jupiter*. The three words are identical and mean the sky-father. This one grain of fact is worth more than all the theories propounded on the subject. It shows that our Aryan forefathers were in search of the Father of fathers, and to the question of questions, what and where is He, the very first answer given by them, of which we have got any historical knowledge, is, "He is the great sky above." Ten thousand years ago the greatest question conceivable by man, had not only been put, but an answer, the importance and the value of which we will see later on, had been given.

So far I have followed in the footsteps of Professor Max Müller and other western scholars. But if truth be our goal, it is not always possible to stop even where the old masters stopped. These scholars were of opinion that

¹ This short address was read at a Special General Meeting of the Society held at Darjeeling on the 18th October 1907, and presided over by His Honour Sir Andrew Fraser, Lieutenant-Governor of Bengal—A. C. S.

Dyaus was only one of the gods worshipped by the primitive Aryans. I have shewn elsewhere that the religion of the Aryan race began with the worship not of many gods, but of one god only, namely, *Dyaus*. I do not say this was mono-theism. I shall try to avoid all technical terms as much as possible. I only assert that at one time they worshipped *Dyaus* only. The subject is rather a difficult one, but I place before you some of the arguments on which my conclusion is based.

(1) The first is a negative one, but its force will be appreciated by those who value facts more than theories. There is no evidence that before their dispersion from their original home the Aryans worshipped any other god besides the *Dyaus*.

(2) The Rigveda speaks of *Dyaus* as पूर्वजः and देवपुत्रः—the first god born, of whom the other gods were the sons. The force of this argument is very much enhanced when it is remembered that *Dyaus* was so called at a time when he had ceased to be the supreme god.

(3) The generic term for gods in the Rigveda is देव । It is derived from the name of the sky दिव् ।

(4) The religions of the Chinese, the Egyptians, and the Akkadians all began with the worship of the sky. The Egyptian word *nutra*, a god, is derived from *nut* the sky.

But why was the sky taken for God? The answer is very important, but also very simple. First of all, at that ancient time, our forefathers had not yet learnt to reflect, meditate, look inward and do abstract thinking. They could only observe, look around, above and below. They were intelligent enough to see that any object on earth, mountains, rivers and plains, plants, animals and human beings or even the earth herself could not be the Father they were in search of. These were their equals and many even their inferior. But the blue vault above with the sun, moon and the millions of stars, how grand, how awe-inspiring, the source of heat and light, encircling the earth, always visible but always inaccessible. What wonder that those grand old men, mentioned as sages and poets in the Rigveda, fell on their knees and cried out "Father-Heaven." Such a thing has happened even in our prosaic sceptical times. Herbert Spencer, the greatest scientific philosopher the world has yet seen, thus spoke of Space in the last paragraph of his last book "Facts and Comments." "And then comes the thought of this universal matrix itself antecedent alike creation or evolution, whichever be assumed, and infinitely transcending both, alike in extent and duration; . . . Of late years the consciousness that without origin or cause infinite space has ever existed and must ever exist, produces in me a feeling from which I shrink." The experience of that great philosopher, unfortunately, was rather defective on the spiritual side, otherwise the response would have come from him as it came from the Aryan sages ten thousand years before, and he too would have exclaimed, "This was the Great Father I was in search of."

When thus speaking of the infinite Space surrounding us on all sides, I am perfectly aware that the whole host of Idealistic Philosophers, with Emmanuel Kant at their head, are against me. But the question of Space is the crucial test of Idealism. The great German Philosopher finding that the idea of Space cannot be derived from that of material objects (for the one is infinite and the other is finite and the existence of matter itself presupposes Space, and though we can conceive the negation of matter it is not possible to conceive the non-existence of Space), at once took refuge under an idea suggested by Leibnitz that space is the

creation of our mind. It did not strike him that our finite minds are as little able to produce the idea of infinite and eternal Space as material objects. He was wrong in not seriously considering the views of the great Newton and the God-intoxicated Spinoza, that Space is not simply an idea but an absolute reality. The mistake of Kant and a number of philosophers, before and after him, both in the west and in the east, is on account of their assumption that God must be pure intelligence—in the words of Yajñavalkya विज्ञानघन एव । and has no material side.

As to what is this infinite Space within which is contained the whole universe, the best exposition is that of Badarayana the founder of the Vedantic Philosophy. One of his aphorisms is आकाशसत्त्विङ्गात्.

Infinite Space is God as it bears His characteristics. The argument is very simple. God alone is infinite and eternal. Space being infinite and eternal can only be God.

The worship of Dyauspita was the beginning of the religion which long afterwards we find in the Rigveda in a more developed state—unfortunately developed in a wrong direction. The Hindus at one time offered sacrifices to the gods. A fire was made by rubbing one piece of wood against another and into this were thrown a strong fermented liquor prepared from a creeper called *Soma* (Zn *Haoma*), cakes of different sorts, cooked meat, etc. When this was being done, hymns of praise were recited, holy songs were sung and prayers were offered. The Rigveda is a collection of a little more than one thousand of these hymns. These hymns speak not only of the old Dyauspita, but of a number of other gods and goddesses. These may be divided into three classes:

- (1) Gods having physical objects and powers as their basis; e.g., the sun, moon, fire, rivers, etc.
- (2) Abstract ideas personified; e.g., अद्धा Faith, मन्यू Anger, etc.
- (3) Eminent leaders deified; e.g., King Vivasvān, King Yama, Viṣṇu, etc.

My next endeavour will be to point out how from the worship of one god—Dyauspita the religion of one branch of the Aryan race, namely, the Hindus, became a worship of many gods. This was inevitable, and the change came about in the most natural way. It is only God who is indivisible, and it is He alone with whom nothing else can be compared. Let any nation begin with the worship of any thing other than the true God, a multiplication of gods is sure to follow. Our Aryan forefathers though they took the grandest object in nature—Dyaus—the sky above with all the shining bodies in it as their god, yet that object as conceived by them was not the true God. They were, no doubt, struck with the infinitude, at least the immensity of the sky, but they failed to grasp the difference between the infinite, eternal blank space as Herbert Spencer called it and the finite objects contained in it—the suns, moons, stars, etc. Their Dyaus was the blue vault plus these objects. It was a mixture of the finite and the infinite. And when a mixed thing is taken for pure truth, in the language of Hegel, what happens is this. The mixed thing revolves like a globe and one after another reveals all the untruth contained in it. In other words it is a universal law that untruth should appear in all its ugliness before we can fully abandon it. This actually happened in case of the worship of Father Dyaus. Men soon began to think if the sky above was their father, was not the earth on which they were born and brought up, their mother? So in place of one god, there came to be two gods or rather a god and a goddess. The

next step was the division of Dyaus into a number of separate gods. The sun, moon and the stars, contained in it, were separately worshipped. This process of multiplication of gods once begun, went on apace till there was not room enough for the gods and goddesses in the three divisions of the universe—the heaven, earth and the atmosphere and one class of gods—the abstract gods, took shelter in the minds of men.

This, I believe, was the origin of the Vedic poly-theism. The ordinary idea that most of the Vedic gods were tribal gods, taken by the R̥ṣis from the conquered races, is simply absurd. They were at the time too proud to bow down before any god of the non-Aryan robbers who were looked down upon with the greatest contempt.

I have one more stage of the Vedic religion to place before you, and that is its decline and fall and the rise of Monotheism out of its ashes. The answer long ago given to the question of questions—where is our father of fathers—that the great Dyaus above is He, being worked up for ages, at last proved insufficient to meet the requirements of the growing intelligence of the R̥ṣis. Several causes brought about this result. I place before you the most important of them.

(1) By a multiplication of the gods and goddesses the Vedic pantheon grew too heavy and tumbled down by its own weight. The R̥ṣis got frightened by the apparition they themselves had created. There were so many gods and goddesses, whom to pray in case of urgency? A god not named in the sacrifice by mistake, might be offended, and what harm he might not do?

(2) With the progress of what may be called the beginning of scientific knowledge, the R̥ṣis, especially the forefathers of our Parsi friends, saw that the earth, sun, moon, etc., are material bodies and gods must be *asuras* (Zn Ahuras), i.e., living intelligent spirits.

(3) Of all the causes that brought about the fall of the Vedic religion, none was so powerful as what Professor Max Müller has called *Heno-theism*. Vedic polytheism, he pointed out, was very unlike that of other countries, e.g., that of Greece and Italy. In these countries one god, not always the same god, was supreme and others subordinate to him. The case was different in India. At one stage of the Vedic religion though the R̥ṣis worshipped a large number of gods and goddesses, there was no superiority or inferiority among them. Every one of them was supreme. Professor Max Müller failed to see the reason and significance of this important fact. A little consideration will, however, convince us that this was due to religion with the R̥ṣis being a living power. However large the number of gods one may worship, and whatever the nature of these gods may be, if his be a living religion and not simply the performance of certain rites under a traditional belief, he will be bound in course of time to consider every one of his gods as not only the supreme god, but infinite as far as his idea of infinity goes. For, suppose, his gods are the sky, the earth, a river, a piece of stone, fire, etc., and he is worshipping the piece of stone. If religion is a living power with him he will be bound to give to his stone-god all his love and respects, and ascribe to him all the powers he is capable of conceiving. It will be simply impossible for him to say, "O my god, your power extends thus far and no further." If he will do otherwise his stone will cease to be his god.

These causes led first to the overthrow of the Vedic pantheon and then to the rise of a belief in one true god. At the end of the Rigvedic period we find that the R̥ṣis have got glimpses of a new faith. From many gods they have come to the all-knowing, all-seeing infinite Spirit.

The Hero-Gods of the Rigveda.

By MR. A. C. SEN, M.A., M.R.A.C., C.S. (retired).

I.—THE PITRIS OR THE VEDIC FATHERS.

To students of the Rigveda an accurate knowledge of the *Pitris* or the Vedic Fathers is of very great importance. Without it a number of historical facts mentioned in that unique collection of hymns will remain for ever enshrouded in darkness. There are customs descended from the Vedic times to our own that can only be explained if we first understand who the *Pitris* were. Again, the clue to the origin of an important class of gods in the Vedic pantheon, can only be discovered if we first rightly grasp the beliefs of the *Ris̥is* about the position the *Pitris* occupied after their death. Yet the subject is not in itself a very difficult one. Whatever difficulty it appears to involve, is the creation of those scholars who would not take things in their ordinary, simple and easy way. I do not think there is any warrant in the Rigveda itself to say with the western scholars that the *Pitris* were mythological beings—objects of nature personified; e.g., that *Yama* represents the setting sun (Max Müller). The view first started by the author of the *Taittiriya Brāhmaṇa*, again, that *Prajāpati* created the *Pitris* and the human beings separately, is based on a wrong interpretation of a *rik* of hymn 130 of the tenth *mandala*. It is discredited by the meaning of the term "*Pitris*" itself. The *Ris̥is* themselves believed the *Pitris* to be their ancestors. According to them the *Pitris* were human beings, who were born as men are born, who begot children as men do and died like men. While on earth they founded the institute of sacrifice and worshipped the gods with the *Soma* juice offered with hymns in praise of them. After death along with *Yama*, they discovered the path to the highest heaven and are now drinking the ambrosial *Soma* in his company in the cool shade of a tree with beautiful leaves.

1. *The Pitris were men.*—When speaking of the *Pitris* as men, I am perfectly aware that I take a view different from that held by the Indian commentators, beginning with the author of the *Taittiriya Brāhmaṇa* as well as by many western scholars. In the T.B. (II. 3. 8. 2) the *Pitris* have been spoken of as a class distinct from men having been created by *Prajāpati*, lord or creator of creatures, separately :—

प्रजापतिरकामयत् प्रजायेयेति

सोऽसुरान् सृष्ट्वा पितेवामन्यत् तदनु पितृनसृजत् ।

स पितृन् सृष्ट्वाऽमनस्यत् तदनु मनुष्यानसृजत् ॥ २ । ३ । ८ । २

Prajāpati desired to have creatures After having created the *asurās* he thought himself as a father. Then he created the *Pitris*. After having created the *Pitris* he meditated (thought as a man). Then he created the men.

Succeeding *Brāhmaṇas* and the *Purāṇas* have all adopted this view. It appears to be based on a misinterpretation of the 130th hymn of the tenth *mandala* of the Rigveda. The 5th and the 6th *riks* of the hymn run thus :—

विराण्वित्रात्ररुणयोरभि श्रीरिन्द्रस्य त्रिष्टुप्तिह भागो अङ्गः ।

विश्वान्देवाङ्गयया विवेश तेन चाकृत्स्न ऋषयो मनुष्याः ॥ ५

चाकुलपे तेन ऋषयो मनुष्या यज्ञे जाते पितरो नः पुराण्ये ।
पश्यन्मनसः चक्षसा तान्य इमं यज्ञमयजन्त पूत्रैः ॥ ६

Sāyana thus explains these verses on the authority of the T.B. itself :—

Mitra and *Varuna* were born from *Prajapati* with the metre *Virāj*, *Indra* with the *Tristup* and the All-gods with the *Jagati*. By that sacrifice were created the *Risīs* and men. 5.

On that old sacrifice being performed, by it were created the *Risīs*, men and our fathers. I think I am seeing with my mind's eyes those who formerly performed the sacrifice. 6.

I take the liberty to differ from such a high authority. The root *klrip* in these *ṛiks* does not convey the idea of creation, but that of one thing becoming another thing or of one thing being changed into another. Moreover, if Sāyana's interpretation be accepted, it would land us on an absurdity. For the second line of the first *ṛik* of the hymn tells us :—

इमे वयन्ति पितरो य आययुः ।

These fathers who have come here wove (the garment) of sacrifice.

If it were this sacrifice that created the *Pitris* then we come to this, that the *Pitris* were created in the very sacrifice which they themselves performed. If it be replied that the third verse says that the sacrifice was performed by the All-gods, we do not escape from the absurdity. For according to T.B., *Mitra* and *Varuna* and the other gods were also born in this sacrifice. It should be noticed here that the T.B. is not without its authority. The 13th *ṛik* of the 90th hymn of the tenth *mandala*—the celebrated *puruṣasūkta* runs thus :—

चन्द्रमा मनसो जातश्चक्षोः सूर्यो अजायत ।

मुखादिन्द्रश्चाग्निश्च प्राणादायुरजायत ॥ १० । ९० । १३

From his mind was born the moon : the sun was born from the eyes. From the mouth *Indra* and *Agni* ; and *Vāyu* was born from his breath. X. 90.13.

Unless read with sufficient care so as not only to understand the mere language, but also to see the very soul of truth contained in them, hymns 90 and 130 would appear to be full of contradictions and absurdities. But really they are not so. The fact is, these two hymns do not speak of the creation of the world at all. They are somewhat pantheistic but not fully so. They speak of a *Puruṣa*—person, who is three-fourths transcendent—“त्रिपादस्यामृतं दिवि” and one-fourth all this world—“पादोऽस्य विश्वा भूतानि” A sacrifice is conceived as being performed by the All-gods or the *Pitris*. There is no contradiction in this, for towards the end of the *Rigveda* the *Pitris* being more or less deified, were regarded as gods or the All-gods.

महिम्न एषां पितरश्च नेशिरे देवा देवेन्द्रधुरपि क्रतुं । १० । ५६ । ४

The fathers also attained the glory of these (gods). Themselves gods they offered sacrifices to the gods.

This was the first sacrifice. Then comes the idea of conceiving the whole world as the *puruṣa* : It is in connection with this idea that the question was raised, what was his mouth, what the two arms, etc. ?

मुखं किमस्य कौ वाहू का उरु पादा उच्येते ।

Notice that the question is not what came out of the mouth—what out of the arms, etc. The first part of the answer is given in the proper form.

ब्राह्मणोऽस्य मुखमासीद् बाहूराज्यः कृतः ।

ऊरु तदस्य यद्वैश्वः ॥ १० । ९० । १२ ।

Then happened a sad thing, which shows that none can escape from the consequences of a transgression of justice—not even a Vedic *Riṣi*. After speaking of the *Brāhmanas*, *Kṣatriyas* and the *Vaiśyas*, the *Riṣi* wanted to speak of the *Çūdrās*. He would not make them a part of the पुरुषः, not even his foot. For what is the difference between the mouth and the foot when these parts are of the Great Person.

But are not the *Çūdrās* godless, black-skinned, non-aryan *dasyus*? So he added पदभ्यां शूद्रो अजायत ;—The *Çūdra* was born from his feet. As soon as he had done this the *Riṣi* forgot his whole idea and instead of saying the moon was his mind, the sun his eyes, *Indra* and *Agni* his mouth and the wind his breath (आत्मा ते वातः । ७ । ८७ । २ ।) he said, these gods were born from different parts of his body.

चन्द्रमा मनसो जातश्चक्षोः सूर्यो अजायत ।

सुखादिन्द्रश्चाग्निश्च प्राणाद्वायुरजायत ॥ १० । ९० । १३

But we must not make too much of what was a mere slip of a weak moment. Barring this, the पुरुष-सूक्तः is a grand hymn, the like of which is not to be found till we come to the time of *Nāmaka*, the real lion of the *Sapta Sindhavaḥ*, whose *ārati* is the grandest hymn ever composed.

Remembering that the पुरुष-सूक्तः does not describe the creation of the world but conceives the world as the Great Person, as the sacrificial horse was so conceived at the beginning of the *Bṛihad Āraṇyaka*, or the Great Person himself was again conceived in the *Bhagavad Gītā* (Chapter XI verses 15 to 40)—remembering also that hymn 130 of the tenth *mandal* has been composed on the model of the पुरुष-सूक्तः I hasten to give below my translation of the fifth and the sixth verses of the former hymn :—

The metre *Virāj* adhered to *Mitra* and *Varuna*. In that sacrifice the *Tristup* was *Indra's* portion day after day. The *Jagati* entered into the All-gods. By this those who were men became *riṣis*.—5.

By this, on the old (=first) sacrifice being performed, our human fathers became *riṣis*. I think, I see, by my mind's eyes those who first performed the sacrifice.—6.

The force of the word तेन – तेन हेतुना—by this, in the second line of the fifth verse and in the first line of the sixth verse, will clearly appear if we consider the double meaning attached to the word *Jagati*. It is derived from the root गम् to move, by reduplication. *Jagati* means the metre of that name. Of all Vedic metres it contains the greatest number of syllables. The word *Jagati* also means moving—living—human beings. The metre *Jagati* may also be said to represent the *viç*—the people, owing to its containing the greatest number of syllables. As the *Jagati* is the special metre of the hymns in which the All-gods have been praised, it may be

d to have entered into these gods—to have become, in a manner, these is. Hence the *Pitris* who were mere men—*Jagati* at first, became s—the All-gods, on the performance of this great sacrifice. This may be reasoning of a logical order, but that the Vedic poets reasoned in way appear from numerous instances to be met with in the *Brāhmaṇas* the *Upaniṣads*.

Hymn 130 of the tenth *mandal* leaves no doubt that the Vedic bards eved that the *Pitris* were born as men who afterwards became *ṛiṣis*. re are other hymns in support of this conclusion.

अस्माकमत्र पितरो मनुष्या अभिप्रसेदुर्द्धतमाश्रयाः ।

अश्वमज्जाः सुदुधा वत्रे अन्तरुद्धा आजन्मषो हवानाः ॥ ४ । १ । १३

Our human fathers while here (*i.e.* on earth) having performed religious rites went towards the place. Having invoked the *Ushās* liberated the easily milking cows confined in a rocky pen, from out of the cave.—IV. 1. 13.

appears that the fathers were not all even worshippers of gods.

प्रनुवोचासुतेषु वां वीर्यां यानि चक्रयुः ।

हतासो वां पितरो देवश्चत्रव इन्द्राग्नी जीवथो युवम् ॥ ६ । ५९ । १

In this sacrifice I shall soon recite you those heroic deeds that you formerly did. By you, O *Indra* and *Agni*, those fathers who opposed the *devās* were slain,—you survived.—VI. 59. 1.

may say in passing that these fathers—the enemies of gods—the *देवश्चत्रवः पितरः*—were the Iranian *ṛiṣis*—the ancestors of our kins—the Pars's, who, on account of the excesses in connection with the up of *Indra*, lost faith, at first, in that comparatively recent god and ately in all the *devās*—*Dyaus* and his sons and worshipped *Ahura* *la*—the Great *Asura*—the Supreme Spirit.

1. *The Pitris begot children like men.*—If one is not sceptically inclined id all measure, the expression “*nah pitarah*”—our fathers—a'one ; to be sufficient evidence of the fact that the Vedic poets believed *itris* to be their ancestors. But there are *ṛiks* in which this fact has expressly stated. Here is one :—

सहोभिर्विश्वं परिचक्रमु रजः पूर्वाधामान्यमिता सिमानाः ।

तद्वपु विश्वा सुवना नियेमिरे प्रासारायन्त पुरुष मजा अमु । १० । ५६ । ५

With might they (the Fathers) travelled over all regions and measured places unmeasured before. By their bodies they encompassed all the world and in many ways spread the creatures.—X. 56. 5.

It will be seen that the *rik* speaks of the spreading and multiplication e fore-fathers of the Vedic *ṛiṣis* in countries where they had not been re. This is a very important fact and I have made use of it in my r on *Viṣṇu*.

तृतीयेन कर्मणा ।

स्वां प्रजां पितरः पित्रं सहः आ अवरेषु अश्नुः तन्तुं आततं ॥ १० । ५६ । ६

By their third act the *Pitris* gave their own descendents paternal strength and placed them on the lower region (earth) as a thread spun out.—X. 56. 6.

3. There were different families and clans among the Pitris.

तसु नः पूर्वं पितरो नवग्वाः सप्तविंशसो अभिवाजयन्तः ।
 नक्षत्राभं तसुर्नि पर्वतेष्णामद्भ्यो घवाचं सतिभिः शविष्ठम् ॥ ६ । २२ । २
 मातलौ कथैर्यमो अङ्गिरो भितृहस्यति ऋक्भिर्वावृधानः ।
 यांश्च देवा वावृधुर्यच देवान् स्वाहान्ये स्वधयान्ये मदन्ति ॥ १० । १४ । ३
 अङ्गिरसो नः पितरो नवग्वा अथर्वाणो भगवः सोम्यासः । ६
 ये नः पूर्वं पितरः सोम्यासोऽनूहिरे सोमपीथं वसिष्ठाः । १० । १५ । ८

Our fathers of old, the *Navagvās*, the sages seven, went to him to obtain strength. *Indra*, who resides on mountains (clouds), who overcomes opponents, who is most active, who speaks truth, and who has grown mightiest by hymns.—VI. 22. 2.

Mātali (= *Indra*) is magnified with the *Kavis*; *Yama* with the *Angirās*; *Brihaspati* with the *Rikvans* whom the gods magnified and who magnified the gods—these (i.e. the gods) delighted with *Śvāhā* and those (i.e. the *Pitris*) with *Śvadhā*.—X. 14. 3.

Our *Soma*-offering fathers—the *Angirās*, the *Navagvās*, the *Atharvans*, the *Bhrigus*. 6.

Our *soma*-offering fathers of old, the *Vasisthās*, who offered *soma*-drink (to the gods).—X. 15. 8.

There are other families and individuals mentioned in other places of the *Saṁhitā*.

4. *The Pitris were the founders of the religious institutes*.—This point will be clearly established when we come to deal with the illustrious *Pitris*, such as *Vivasvān*, *Yama*, *Brihaspati*, *Trita*, etc. In the meantime I put together a few *ṛiks* containing general statements.

ते दशग्वाः प्रथमाः यज्ञमुहिरे । २ । ३४ । १२

They, the *Daṣagvās*, were the first to institute sacrifice.—II. 34. 12.

यो यज्ञो विश्वतस्तनुभिस्तत एकशतं देवकर्मभिरायतः ।
 इमे वयन्ति पितरो य आययुः ... ॥ १० । १३० । १

That sacrifice that was extended on all sides by yarns,—that was extended by a hundred sacred acts; these fathers who have come here, wove....—X. 130. 1.

ये चित्पूर्वं ऋतसाप ऋतावान् ऋतावृधः ।
 पितृन्तपस्वतो यम तांश्चिदेवापि गच्छताम् ॥ १० । १५४ । ४

Those who were the first to institute sacrifices, who practised sacrifices and who promoted sacrifices—to the fathers full of austerity, O *Yama*, even to them let him (the spirit of the dead) depart.—X. 154. 4.

We have already seen that the *Pitris* were **सोम्यासः**—offerers of *Soma*. libation to the gods. They also sang hymns while performing sacrifices.

नवग्वासः सुतसोमास इन्द्रं दशग्वासो अम्यर्चन्तर्कैः ॥ ५ । २९ । १२

The *Navagvās* and the *Daṣagvās* who brewed *soma* adored *Indra* with hymns.—V. 29. 12.

5. In course of time the Pitris died ; some were cremated and some buried.

ये अग्निदग्धा ये अर्नाग्निदग्धाः १०।१५।१४

(Of the *Pitris*) those who were burned by *Agni* and those who were not burned.—X. 15. 14.

That the disposal of the dead bodies by burial also existed simultaneously with cremation, or before cremation came into vogue, the following *ṛiks* will shew :—

मोषु वरुण सुन्मयं गृहं राजन्नहं गमम् । ७।८९।१

May I not yet, O King *Varuṇa*, go down to the house of clay (grave).—VII. 89. 1.

उपसर्पे मातरं भूमिमेतामुख्यचक्षुः प्रथिवीं सुशशेवाम् ।

ऊर्णस्रदा युवतिर्दक्षिणावत यथा त्वा पातु निर्वृतेरुपस्थात् । १०।१८।१०

उच्छ्वंचस्त्र प्रथिवि मा निबाधथाः सृपायनासौ भव सूपवंचना ।

माता पुत्रं यथा सिचाम्येनं भूम ऊर्णहि । ११

उच्छ्वंचमाना प्रथिवी सुतिष्ठतु सहस्रं मित उप हि अयन्ताम् ।

ते गृहासौ घृनश्नुतो भवन्तु विश्वाहासौ शरणाः संत्वत्र । १२

Enter into the mother earth—she is far spreading and giver of happiness. This young dame soft as wool—may she save you who freely gave donations to priests, from destruction's lap.—X. 18. 10.

Heave thyself, O earth, do not hurt him. Be easy of access and friendly to him. Cover him, O earth, as the mother does her son, with the skirt.—11.

May the heaving earth stand still ; may a thousand clods protect him above. May they be his butter-exuding houses ; may they be, from day to day, his place of refuge.—X. 18. 12.

6. Along with *Yama* the *Pitris* made the path to the next world :—

यमाय मधुसक्तं राक्षे हव्यं जुहोतन ।

इदं नम ऋषिभ्यः पूर्वजैभ्यः पूर्वभ्यः पथिकृद्भ्यः ॥ १०।१४।१५

Offer to King *Yama* a libation full of sweetest honey. This salutation is to the oldest first born *ṛiṣis*, the path-makers.—X. 14. 15.

यमो नो गातुं प्रथमो विवेद नैषा गव्यूतिरपभर्त्तवा उ ।

यत्रा नः पूर्व पितरः परेयुरेना जज्ञानाः पथ्या अनुस्त्राः ॥ १०।१४।२

Yama first found the path for us ; this path none can take away (from us). Our fathers of old have gone by this path ; going by it they have found their own places.—X. 14. 2.

7. The *Pitris* now live in the sun where King *Yama* rules over them. They drink *soma*-juice and revel in his company in the cool shade of a tree with beautiful leaves.

पितृन्सुविदत्रां उपेहि यमेन ये सधमादं मदन्ति । १०१४।१०

Go to the wise fathers who revel in *Yama's* company.

यस्मिन्दृक्षे सुपलाशे देवैः संपिबते यमः ।

अत्रा नो विशपतिः पिता पुराणां अनुवेनति ॥ १०।१३५।१

Under that good tree with beautiful leaves where *Yama* drink with the gods—there our father—king of the people, wished me to go after the old ones (*Pitris*)—X. 135. 1.

यत्र ज्योतिरजस्रं यस्मिंश्चोक्ते स्वरहितम् ।

तस्मिन्मां धेहि पवमानामृते लोके अक्षित इन्द्रायेन्दो परिचित्र ॥ ७ ॥

यत्र राजा वेवस्वतो यत्रावरोधनं दिवः ॥ ८ । ११३ । ८

Place me in that immortal, undecaying world—where there is light without ceasing—where the sun is placed, O *Pavamāna*. Flow, O *Indu*, for *Indra's* sake.—7, where the son of *Vivasvān* is king—where is the inner apartment of heaven.—IX. 113. 8.

मही द्यौः पृथिवी च न इमं यज्ञं मिमिक्षतां ।

पिपृतां नो भरिमभिः । १ २२ । १३

तयोर्द्वि धृतवत्स्यो विप्रा रिहन्ति धीतिभिः ।

गन्धर्वस्य ध्रुवे पदे । १ २२ । १४

May the mighty heaven and earth bedew this sacrifice of ours and may they fill us with nourishment.—I. 22. 13.

Their milk full of butter, the sages (= *Pitris*) taste with hymns, in the eternal abode of the *Gandharva* (= *Vivasvān* identified with the sun).—I. 22. 14.

सहस्रशीयाः कवयो ये गोपायन्ति सूर्यम् ।

अधीन्त तपस्वतो यम तपोजाँ अपिगच्छताम् ॥ १० । १५४ । ५

The sages—composers of a thousand hymns who protect the sun, the *ṛsis* full of austerity, whose strength is austerity, O *Yama*, even to them let him go.—X. 154. 5.

तद्विष्णोः परमं पदं सदा पश्यन्ति सूरयः ।

दिवीव चक्षुराततम् ॥ २२ । २

The highest seat of *Viṣṇu* the sages ever see like an eye spread in heaven.—I. 22. 20.

[i.e., The sun which is the eye of *Varuṇa* and spread in the sky. It is the highest seat or step of *Viṣṇu*.]

इदं यमस्य सादनं देवमानं यदुच्यते,

इयमस्य ध्वज्यते नालौर्यं गौर्भिः परिष्कृतः ॥ १० । १३५ । ७

This is the house of *Yama* which is famed as the home of the gods—where the flute is being always played—glorifying *Yama* with hymns—X. 135. 7.

8. After death the *Pitris* united with the rays of the sun.

इमे नु ते रश्मयः सूर्यस्य येभिः सपितृन् पितरो न आसन् । १ । १०९ । ७

These are those rays of the sun with which our fathers obtained union.—I. 109. 7.

It was a common belief among the Vedic *ṛsis* that after death the essential portion of man united with light and some illustrious *Pitris* united with particular heavenly bodies. This subject will be taken up again when dealing with *Vivasvān*, *Viṣṇu*, *Bṛhaspati* and the *Saptarṣis*.

इदं त एकं पर उत एकं तृतीयेन ज्योतिषा सं विश्रस्व ।

संवेशने तन्वश्चासरेधि प्रियो देवानां परमे जनित्रे ॥ १० । ५६ । १

तनूषे वाजिन्तन्वं नयन्ती वामसकम्भं धातुश्मैतुम्यम् ।

अह्नुतो मही धरुणाथ देवान्दिवीव ज्योतिः स्वमामिमयीयाः ॥ २ ॥

स्वां प्रजां बृहदुक्थो महित्वा वरेभ्यश्चादापरेषु ॥ ७ ॥

This is your one portion [the *riśi* *Bṛihduktha* addressing the spirit of his dead son].—*Bṛjin*—this another ; with the third enter into light. By so entering obtain a beautiful body and by this in your highest birth be dear to the gods.

May the earth, O *Bājin*, accept your body and give us wealth and happiness to you. You lived a right life, for refuge unite with the great gods, as light in heaven.....By his greatness *Bṛihaduktha* placed his son on earth and in heaven.—X. 56. 1-2 and 2nd line of 7.

9. *The Pitris were more or less deified.*

(a) They have sometimes been addressed as gods.

महिम्न यथां पितरश्च नेशिरे देवा देवध्वदधुरपि क्रतुम् । १० । ५६ । ४

[Translation given above.]

(b) They attained divinity.

ये तातृषुर्देवता जेहमाना होत्राविदः स्तोमतापो अकैः ।

आग्ने याहि सुविदत्रेभिर्वाङ् सत्यैः कव्यैः पितृभिर्घर्मवद्भिः ॥ १० । १५ । ९

Those thirsting fathers who attained divinity, who knew how to invoke gods and who carved out hymns with *riks*—with them, the sages, the truthful, the poets and who used to sit near the *gharma* vessel (for boiling milk for the gods), come to us, O *Agni*.—X. 15. 9.

(c) They were prayed to as if they were gods, both to bestow favours and to abstain from doing any harm.

अवन्तु नः पितरः सुप्रवाचना उत देवो देवपुत्रे ऋतावृधा । १ । १०६ । ३

May the sweet-hymn-uttering fathers as well as the divine couple, heaven and earth, magnified by sacrifices and having gods for their children, protect us.—I. 106. 3.

ब्राह्मणासः पितरः सोम्यासः शित्रे नो द्यावापृथिवी अनेहसा । ६ । ७५ । १०

May our hymn-uttering, *soma*-offering fathers and sinless heaven and earth be beneficent to us.—VI. 75. 3.

मो घू णो अत्र जुहुरन्त देवा मा पूर्वे अग्ने पितरः पदज्ञाः ।

पुराण्योः सन्ननोः केतुरन्तः ॥ ३ । ५५ । २

May the gods never hurt us—may the fathers who knew the home, O *Agni*, never hurt us when the banner of light (=the sun) makes his appearance between the two old homes.—III. 55. 2.

मा हिंसिषु पितरः केन चिद्गो यद् अगमः पुरुषताकराम । १० । १५ । ६

Harm us not, O Fathers, for any sin we might have committed through human weakness.—X. 15. 6.

(d) They were invited to the sacrifices along with the gods and were believed to come in the same cars with the gods and, like them, to drink the *soma*-juice and eat the *purodāśas* sitting on the grass seats :—

इमं यम प्रस्तरमा हि सीदांगिरोभिः पितृभिः संविदानः ।

आ त्वा मयाः कविशस्ता वहंतेना राजन् हविषा मादयस्व ॥ १० । १४ । ४

अंगिरोभिरागहि यज्ञियेभिर्यम वैमपैरिह मादयस्व ।

विवस्वतं हुवे यः पिता तेऽस्मिन् यज्ञे बर्हिष्या निषद्य ॥ ५ ।

यमाय मधुमत्तमं राज्ञे हव्यं जुहोतन ।

इदं नम ऋषिभ्यः पूर्वजेभ्यः पूर्वभ्यः पथिकृद्भ्यः ॥ १५ ॥

United with the *Angirās*, O *Yama*, come and sit on this grass seat spread here. May the hymns uttered by the *Kavis* bring you. Be exhilarated, O King, with this libation.—X. 14. 4.

Come, O *Yama*, with the adorable *Angirās* who can assume any form they please and rejoice in our sacrifice.

I call also *Vivasvān* who is your father to sit on the grass seat in this sacrifice.—5.

[X. 14. 15.—Translation given above.]

10. I give below in original, as well as in translation, hymn 15 of the tenth *mandal*—the only entire hymn in the *Rigveda Samhitā* on the *Pitris*:—

उदीरतामवर उत्तरास उन्मथ्यमाः पितरः सोम्यासः ।

असुं य ईयुरवृका ऋतज्ञास्ते नोऽवन्तु पितरो हवेषु ॥ १ ॥

इदं पितृभ्यो नम अस्त्वद्य ये पूर्वासो य उपरास ईयुः ।

ये पार्थिवे रजस्या निषत्ता ये वा नूनं सुवृजनासु वित्तु ॥ २ ॥

आहं पितृनन्तुविदत्राँ अविस्मि नपातं च विक्रमणं च विष्णोः ।

बर्हिषदो ये स्वधया सुतस्य भजन्त पितृवस्त इहा गमिष्याः ॥ ३ ॥

बर्हिषदः पितर ऊत्यर्वागिमा वो हव्या चक्रमा जुषध्वसु ।

त आ गतावसा शन्तमेनाथा नः शं योररपो दधात ॥ ४ ॥

उपहूताः पितरः सोम्यासो बर्हिष्येषु निधिषु प्रियेषु ।

त आ गमन्तु त इह श्रुवन्त्वधि ब्रुवन्तु तेऽवन्त्वस्मान् ॥ ५ ॥

आच्या जानु दक्षिणतो निषद्योमं यज्ञमभि शृणोत विश्वे ।

मा हिंसोष्टु पितरः केन चिन्नो यद् आगः पुरुषता कराम ॥ ६ ॥

आसोनासो अरुणीनामुपस्थे रयिं धत्त दाशुषे मर्याय ।

पुत्रेभ्यः पितरस्तस्य वस्वः प्रयच्छत त इहोर्जं दधात ॥ ७ ॥

ये नः पूर्वं पितरः सोम्यासोऽनूहिरे सोमपीथं वसिष्ठाः ।

तेभिर्यमः संरराणो हवीँष्युश्नुशङ्निः प्रतिकाममत्तु ॥ ८ ॥

ये तातृषूर्देवत्रा जेहमाना होत्राविदः स्तोमतष्ठासो अक्रैः ।

आग्ने याहि सुविदत्रेभिरर्वाङ् सत्यैः कठयैः पितृभिर्धर्मसङ्निः ॥ ९ ॥

ये सत्यासो हविरदो हविष्या इन्द्रेण देवैः सरथं दधानाः ।

आग्ने याहि सहस्रं देववन्दैः परैः पूर्वैः पितृभिर्धर्मसङ्निः ॥ १० ॥

अग्निष्वात्ताः पितर एह गच्छत सदः सदः सदत सुप्रणीतयः ।

अप्ता हवीँषि प्रयतानि बर्हिष्यथा रयिं सर्ववीरं दधातन ॥ ११ ॥

त्वमग्न ईळितो जातवेदोऽवाङ्ठव्याणि सुरभीणि कृत्वौ ।

प्रादाः पितृभ्यः स्वधया ते अत्तङ्गङ्नि त्वं देव प्रयता हवीँषि ॥ १२ ॥

ये चेह पितरो ये च नेह याँश्च विद्वा यौ उ च न प्रविद्वा ।

त्वं वेत्य यति ते जातवेदः स्वधाभिर्यज्ञं सुकृतं जुषस्व ॥ १३ ॥

ये अग्निदग्धा ये अनग्निदग्धा सद्यो दिवः स्वधया मादयन्ते ।

तेभिः स्वर्गलघुनीतिमतां यथावशं तत्त्वं कल्पयस्व ॥ १४ ॥

May the highest, middlemost and lowest *soma*-offering fathers start for our sacrifice. May they who have obtained the life of a spirit, who are gentle and who know the sacrificial laws, protect us when we invoke them.—1.

May this salutation, to-day, be for those fathers who had gone away first and to those who followed them—to those who are staying in the earthly region and to those who are surely in houses where great sacrifices are performed.—2.

I have known the wise fathers. I have known the descendants of *Viṣṇu* and his stepping (1). Those fathers who sit on the sacrificial grass have come. May they enjoy the *soma*-libation offered with the utterance of *Svadhī*.—3.

Fathers who sit on the sacrificial grass, come ye with your succour and this libation made for you, enjoy. You come with protection that gives happiness. Give us happiness and sinlessness.—4.

The *soma*-offering fathers have been invited to the dear thing laid on the sacred grass. May they come; may they listen to us; may they speak about us; and may they protect us.—5.

O fathers all, bending your knees and sitting on the right side, accept this sacrifice. Whatever offence we have given you on account of our human weakness, do not punish us for it.—6.

Ye fathers, seated near the flame of *Agni*, bestow wealth on the mortal offerer of libation; on his son and on the men present here.—7.

The *soma*-offering *Vasisthās*—our fathers of old who had themselves offered *Soma* drink; *Yama* who desires them, being delighted with them who desires him, eats our offerings at his pleasure.—8.

Those thirsting fathers who have attained divinity, who knew how to invoke gods and who carved out hymns with *iks*—with them the sages, the truthful, the poets who used to sit near the *gharma* vessel (for boiling milk for the gods), come to us, O *Agni*.—9.

Those truthful *havi*-eating and *havi*-drinking fathers, who drive in the same chariot with *Indra* and other gods—come, O *Agni*, with those thousand fathers who adored the gods, with those who died recently and with those who died long ago and who sat near the *gharma* vessel.—10.

Come ye fathers tasted by *Agni*; ye good leaders, sit ye each in your proper place; eat the pure oblations laid on the sacred grass and give us wealth consisting of heroes.—11.

Being adored by us, O all-knowing *Agni*, make the oblations savoury and carry and give them to the fathers. They eat uttering the cry of *Svadhā*. You too partake of the pure offerings.—12.

Those fathers who are here and those who are not here; those whom we know and those whom we do not know well, you know them all, O all-knower. Accept this sacrifice which has been well performed with *Svadhās*.—13.

Those fathers who have been burned by *Agni* and those who have not been so burned and who in heaven enjoy the offerings—with them, O self-shining one, transform this body—the holder of spirit in any way you please.—14.

N.B.—3(1) विष्णोः नपातं च विक्रमणं च—why the *Pitris* have been called descendants of *Viṣṇu* and why in this connection the stepping of *Viṣṇu* has been mentioned at all, will be explained while dealing with the *vikramaṇam* of *Viṣṇu*.

11. Powers of the *Pitris* over cosmical phenomena.—When the *Pitris* were more or less deified, they were believed to have taken part in the creation of the world and to have controlling powers over cosmical phenomena like gods.

अभिश्चावं न कृशनेभिरश्वं नक्षत्रेभिः पितरो द्यामपिञ्चन् ।

रात्र्यां तमो अदधुर्ज्योतिरहन् । १० । ६८ । ११

The fathers adorned the sky with stars as a black horse is adorned with golden ornaments.—X. 68. 11.

आविर्भून्महि माघोनमेघां विश्वं जीवं तमसो निरमोचि ।
महिज्योतिः पितृभिर्दत्तमागात् १० । १०७ । १

The great gift of these (fathers) has appeared—all creatures have come out of darkness. The great light (=sun)—the gift of the *Pitris*, has come.
—X. 107. 1.

Remarks: The *Rīṣi* is going to eulogise the gifts of his *Yajamāns*. He begins by referring to the great gift of the *Pitris*—महि ज्योतिः the great light of heaven.

त इद्देवानां सधमाद आसन्नतावानः कवयः पूर्यासः ।

गूढं ज्योतिः पितरो अन्वविन्दन्त् सत्यमंत्रा अजनयन्नुषासम् ॥ ७ । ७६ । ४

They were indeed the companions of the gods in enjoying the *soma*-juice—the righteous singers of old.

The fathers found the hidden light and with true hymns they generated the Dawn.—VII. 76. 4.

सहस्रशीषाः कवयो ये गोपायन्ति सूर्यम् । १० । १५४ । ५

[Translation given above.]

त्वं सोम पितृभिः संविदानोऽनु द्यावापृथिवी आततं ॥ ८ । ४८ । १३

United with the *Pitris*, O *Soma*, you have spread forth heaven and earth
—VIII. 48. 12.

There are hundreds of *ṛiks* throughout the *Rigveda* showing an intimate relation between the *Pitris* and light. The belief in the *Pitris* adorning the sky with stars, is even now annually commemorated on the *Dipānviṭā* (devali) day by performing a *ṣrādh* ceremony in honour of the *Pitris* followed by a display of lights. The deification of the *Pitris* and especially that of the illustrious ones among them, took place by a slow process, and if all its different steps be considered carefully, it will cease to appear as absurd as it at first does. Of all the causes that led to it the three mentioned below are the most important.

(1) The natural tendency in men to exaggerate the greatness of their forefathers—especially that of the illustrious persons among them. The worship of national heroes is a common thing even in our prosaic sceptical times.

(2) With their multiplication, the greatness of gods was more and more reduced, and the difference between great men and the gods of the lowest order—the *Viṣve devāḥ*—gods without any specific names, was gradually done away with.

(3) The process described in (2) was very much helped by the language describing the acts done by great men, being gradually altered and exaggerated by poets and rhetoricians. Of this latter step the belief that the *Pitris* adorned the sky with stars and generated the dawn and the sun, is an interesting example.

Strange though it may appear at first, this belief is based on two facts. H. Spencer begins his *First Principles* with these words:—

“We too often forget that not only is there ‘a soul of goodness in things evil,’ but very generally also a soul of truth in things erroneous . . . And thus it is with human beliefs in general. Entirely wrong as they may appear, the implication is that they originally contained, and perhaps still contain, some small amount of truth.”

The two facts on which the belief in the super-human powers of the *Pitr̥is* is based are these: First, the Vedic *R̥is̥is* performed sacrifices daily on three occasions— in the morning before the appearance of the dawn, at mid-day and in the evening before night-fall. The three sacrifices—*trisa-vana* were known as *pr̥ātah*,—*mādhyaṁdina*—and *tr̥it̥iya* or *sāyam-savana*. The dawn and the sun appeared after the first sacrifice and the stars made their appearance after the third. The belief was formed that the performance of the sacrifice by the *Pitr̥is* was the cause of the natural phenomena that were seen to follow it. This belief formed a part of that form of religion to which Hegel in his “Philosophy of Religion” has given the name of Magic and to which the religion of the *R̥is̥is* had, at one time, nearly degenerated. Secondly, it is based on a historical fact of very great importance. It is the conquest of the *Pan̥is* and the winning of their cows by the *Angir̥ās* under the leadership of *Brihaspati*, *Ayasya* and *Indra*. The Vedic poets were never tired of alluding to this event. The *ṛiks* given below will show how this event led, through successive stages, to the belief of the *Pitr̥is* having control over the heavenly lights, and finally, of their having created these lights. Language alone gradually changed the idea to such an extent that, in course of time, the word cow itself came to mean light.

अवो द्वाभ्यां पर एकया गा गुहा तिष्ठन्तीरवृत्तस्य सेतौ ।

बृहस्पतिस्तमसि ज्योतिरिच्छन्नुदुखा आर्काव हि तिस्र आवः । १० । ६७ । ४

The milch cows were confined in a dark cave with two doors below and one above. *Brihaspati*, to light up the place, broke open the doors and brought out the cows.—X. 67. 4.

विश्वे अस्या व्युषि माहिनायाः सं यद्गोभिरंगिरसो नवन्त । ५ । ४५ । ८

On the appearance of this adorable one (*i.e.*, the dawn) the *Angir̥ās* got back the cows.—V. 45. 8.

उद्यत्सहः सहस आजनिष्ठु देविष्ठु इन्द्र इन्द्रियाणि त्रिधा ।

पाचोदयत् सुदुधा वत्रे अन्तर्वि ज्योतिषा संवद्वत्तमोषवः । ५ । ३१ । ३

On the rays (of the sun) making their appearance with the rays (of the dawn) *Indra* gave (the *Angir̥ās*) all the wealth and brought out the easily milking cows confined within the mountain and by light drove away the hiding darkness.—V. 31. 3.

From the above it is clear that the cows were confined in a dark cave with three doors all closed. One morning just when the sun had risen *Indra* and *Brihaspati* broke open the doors, lighted up the place by allowing the sun's rays to enter into it, and brought out the cows. This fact was afterwards expressed by saying that they got the dawn, the sun and the cows together.

विभिद्वा पुरं शयथेस पाचिं निस्त्रीणि साकमुदधेरवृत्तत् ।

बृहस्पतीरुषसं सूर्यं गामकं विवेद स्तनयन्निवद्यौ ॥ १० । ६७ । ५

Brihaspati cleft the west-facing castle of the sea, took rest and broke the three gates. He then simultaneously got the adorable dawn, the sun and the cows and roared like the thundering sky.—X. 67. 5.

Then gradually more importance was given to this getting of the dawn and the sun.

सोषामविन्दत् सः स्वः सो अग्निं सो अर्कं वि ववाधे तमांसि ।

बृहस्पतिर्गोवपुषो वलस्य निर्मज्जानं न पवँषो जभार ॥ १० । ६८ । ९

He obtained the dawn; he obtained the sun; he obtained *Agni*; he drove away darkness by light. As marrow is brought out of a limb so did *Bṛhaspati* bring out the cows from a limb of cow-bodied *Vāla*.—X. 68. 9.

हिमेव पर्णा सुषिता वनानि बृहस्पतिनाकृपयद्दलो गाः ।

अनानुकृत्यमपुनश्चकार यात् सूर्यामासा मिथ उच्चगतः । १० । ६८ । १०

As the trees of a forest are robbed of their leaves by winter, so was *Vāla* deprived of his cows by *Bṛhaspati*. The deed done by *Bṛhaspati* is not to be imitated and not to be done over again. Since then the sun and the moon make their appearance regularly one after the other.—X. 68. 10.

अभिश्चावं न कृशनेभिरश्वं नक्षत्रेभिः पितरो द्यामपिंशन् ।

रात्र्यां तमो अदधुर्ज्योतिरहन्बृहस्पतिर्भिन्नदर्द्रसु विदद्गाः । १० । ६८ । ११

The fathers adorned the sky with stars as a black horse is adorned with golden ornaments. *Bṛhaspati* broke open the mountain and obtained the cows.—X. 68. 11.

In this connection we should also remember:—

(i) That the *Pitris* generated fire by friction and gathered it also from lightning and the *Risīs* believed that fire, lightning and the sun are three different forms of the same god.

(ii) After death the *Pitris*, according to the *Risīs*, united with the rays of the sun and some of the *Pitris* entered into some constellations of stars.

This close relation between the *Pitris* and the heavenly lights is also to be found in the Avesta. This has been said about the *Fravashis* corresponding, to a great extent, to the *Pitris* of the Rigveda:—

“We worship the good, strong, beneficent *Fravashis* of the faithful, who shewed their paths to the stars, the moon, the sun and the endless lights, that had stood before for a long time in the same place, without moving forwards, through the oppression of the *daevas* and the assaults of the *daevas*.”

“We worship the good, strong, beneficent *Fravashis* of the faithful, who watch over the stars *Haptoring* (1), to the number of ninety thousand, and nine thousand and nine hundred and ninety-nine.” [Sacred Books of the East, XXIII].

(1) = *Saptarṣis* = Ursa Major.

12. *Devayāna* and *Pitriyāna* paths.—On this point the later opinions as given in the *Chhândyogya*, *Bṛihadāranyaka* and other *Upaniṣads* are not in accordance with the views of the Vedic *Risīs*. The *Upaniṣads* speak of two paths by which men travel after death. Those who have attained the knowledge of *Brahman* and die during the bright half of the moon, go by a number of stages to the world of *Hiranyagarbha* and then merge in *Brahman*. For them there is no returning to the earth. But ordinary people who die during the dark half of the moon, go to the moon by stages and then returning to the earth with rain water, are born as plants, insects, beasts or as men of higher or lower caste according to the merits of the work they had done while previously on earth. This is the theory of *Transmigration* or the law of *Karma*. We have nothing to do with it at present. What concerns us now is the fact that of the two paths mentioned above, the first has been called the *Devayāna* and the second the *Pitriyāna*. This, I maintain, is in conflict with the views of the Vedic *Risīs*. By *Devayāna* path they understood the path leading to the gods—by which (1) *Agni*

carried *havis* to the gods; (2) the gods came down to attend sacrifices and (3) returned to their places after the sacrifices were over. This is also evidently the path by which *Agni* took the dead bodies of the *Pitris* to the gods where their spirits had gone before. The general name of the place is **असुनोति**—the world of spirits—where the spirits are taken to (Rig. X. 12. 4). This is the path *Yama* discovered along with the *Pitris*. There is only one *rik* in which *pitriyānah panthāh* has been mentioned (*Rik* X. 2. 7. See below). The way this has been done shows that it cannot be the inferior path mentioned in the *Upaniṣads*. In fact in the *Rigveda* the *Pitriyāna* and the *Devayāna* paths are the same.

विद्वां अग्ने वयुनानि क्षितीनां व्यानुषक् शुरुधो जीवसे धाः ।

अन्तर्विद्वां अन्नो देवयानानतन्द्रो दूतो अभवो हविर्वोद । १ । ७२ । ७

You who possess all wisdom, O *Agni*, constantly give food to creatures that they may live. You intimately know the paths to the gods and are the ever active messenger carrying libations.—I. 72. 7.

अतारिष्य तमस्यारमस्य प्रति वां स्तोमो अश्विनावधायि ।

ए ह यातं पथिभिर्देवयानैर्विद्यामेघं वृजनं जोरदानुसु । १ । १८३ । ६

We have come to the end of this darkness (of night). This hymn we offer to you, O *Aśvins*. Come here by the *Devayāna* paths. May we obtain food, strength and heroic sons.—I. 183. 6.

उप नो वाजा अश्वरश्मृक्षा देवा यात पथिभिर्देवयानैः । ४ । ३७ । १

O gods *Bija* and *Ribhukṣā*, come to our sacrifice by the *Devayāna* paths.—IV. 37. 1.

आ नो महौमरमतिं सजोषा ग्रां देवीं नमसा रातहव्याम् ।

मघोर्मदाय सहतीमृतज्ञामाग्रे वह पथिभिर्देवयानैः । ५ । ४३ । ६

Bring to us by the *Devayāna* paths, O *Agni*, who is graciously disposed to us, the mighty *Aramati*, the divine dame who has been offered *soma*-juice with salutation, to exhilarate with honey (= *soma*). She is great and knows the sacrifice.—V. 43. 6.

वाजे वाजेऽवत वाजिनो नो धनेषु विप्रा अमृता ऋतज्ञाः ।

अस्य मध्वः पिबत मादयध्वं तृप्ता यात पथिभिर्देवयानैः ७ । ३८ । ८

O wise, immortal and truthful *Bajins*, protect our wealth in every battle. Drink the honey of *soma* and exhilarate. Then being satisfied return to your place by the *Devayāna* paths.—VII. 38. 8.

प्र मे पन्था देवयाना अदृशन्नमर्धन्त वसुभिरिष्कृतासः ।

अमृदु केतुस्रसः पुरस्तात्पुतोच्यागादधि हर्म्यः । ७ । ७६ । २

The *Devayāna* paths have been seen by me. They are harmless and purified by lights. The banner of *uṣā* has been raised in the east—she has come over the buildings.—VII. 76. 2.

एहि मनुर्देवयुयञ्जकासोऽङ्कत्या तमसि क्षेप्यमे ।

सुगान्पथः कृषुहि देवयानान्वह हव्यानि सुमनस्यमानः । १० । ५१ । ५

Come, O *Agni*. Man is desirous to adore the gods and perform sacrifices. You are living in darkness adorning it. Make the *Devayāna* paths easy to travel. Being gracious carry *havis*.—X. 51. 5.

एतान्यग्ने नवतिं सहस्रा सं प्रयच्छ वृषा इन्द्राय भागम् ।

विद्वान्पथ ऋतुशो देवयानान्यौलानं दिवि देवेषु धीह ॥ १० । १८ । ११

Offer these ninety thousand cows to *Indra*—the Bull—as his portion. You know the *Devayāna* paths by which you travel during every sacrifice. Place in heaven in the midst of the gods, the son of *Udana*.—X. 98. 11.

The only *rik* where the *Pitriyāna* path is mentioned in the *Rigveda* is the following :—

यं त्वा द्यावापृथिवी यं त्वापस्तृष्टा यं त्वा सुजनिमा जजान ।

पन्यमनु प्रविद्वान्पितृयानं द्युमदग्ने समिधानो वि भाहि ॥ १० । २ । ७

You (*Agni*) whom heaven and earth, you whom the waters, you whom *Tevasi* the maker of good things, created, know well the *Pitriyāna* path. Being enkindled shine with lights.

These *riks* do not show that the *Pitris* travelled by two paths—the *Devayāna* and the *Pitriyāna*. They rather show that they travelled by the same path by which the gods travelled, both at death and afterwards. But this path has been given the name of *Pitriyāna* path in addition to *Devayāna*, because both the gods and the *Pitris* travelled by it. But a difficulty has arisen in connection with the following rather obscure *rik* :—

हे सुती अश्रुण्वं पितृणामहं देवानामुत मर्यानाम् ।

ताभ्यामिदं विश्वमेजत्समेति यदन्तरा पितरं मातरं च ॥ १० । ८८ । १५

Sayan explains the first line thus—

पितृणां च देवानां च उतापि च मर्यानां मनुष्यानां च हे सुती द्वौ मार्गौ देवयान-
पितृयाणांश्चौ अहमश्रुण्वमस्मौ चम् ।

This explanation itself is ambiguous. It does not say if both the paths are for each of the three classes of beings—gods, *Pitris* and men—or one of them for some and the other for others. In one case it will be unmeaning and in the other it will conflict with the view taken by the *Upaniṣad* *ṛsis*. Griffith's translation is as follows :—

“I have heard mention of two several pathways—ways of the fathers and of gods and mortals”—He adds in a foot note—“the way to the other world and the way back to the earth.”

The *rik* has been thus quoted and explained in the *Satapatha Brāhmaṇa* :—

हे सुती अश्रुण्वं पितृणामहमिति हे वाव सुती इत्याहुर्देवानां चैव पितृणां चेति
ताभ्यामिदं विश्वमेजत्समेतीति ताभ्यां ह्येदं सर्वमेजत्समेति यदन्तरा पितरं मातरं
चेति ॥ १२ । ८ । १ । २१

Eggeling translates it thus :—

Two paths for mortals have I heard of (that of the fathers and that of the gods)—‘two paths indeed there are,’ they say, ‘those of the gods and of the fathers’—thereon all that liveth here passeth for thereon indeed everything living here passes—‘what there is between the father and the mother. XII. 8. 1. 21.

All these interpretations disregard the construction of this particular *rik* as well as the views to be gathered from other *riks* on the subject quoted

above. The most natural rendering is to be found in a footnote at page 237 of Eggeling's *Satapatha Brāhmaṇa* and in a foot note at page 145 to Hopkin's *Religions of India*. Hopkin's word for word rendering is :

“ Two paths heard of the Fathers I, of the gods and of mortals.”

But if this be the correct translation of the *rik*, what is the meaning of the *Pitris* going the way of the mortals? It would not do to say that some of them went the way of the gods and others the way of the mortals. No Vedic *Riṣi*—especially after the *Pitris* had been deified—would make such a statement. This *rik* has always been regarded as a riddle (see Bri. Ar. Upa. VI. 2. 2 where King *Pravāhana* attempted to explain it to that renowned priest of the Kuru Panchala, *Uddālaka Aruni*). What I think to be its true interpretation is given in my paper on “*Viṣṇu*.”

12. *Different classes of Pitris* :—The hymn on the *Pitris*—X. 15 speaks of three classes of *Pitris*—**पराशः**, **मध्यमाः**, **अवरैः**—the highest, middlemost and the lowest. They are all said to be **सोम्यासः**—*soma*-offering. It also speaks of the **वर्हिषदः**—Fathers who sit on the sacred grass seats; the **घर्मसदः**—who sit near the *Gharma* vessel; the **अग्निष्वाता**—those tasted by *Agni*; the **अग्निदग्धाः** and the **अर्नाग्निदग्धाः**—those who have been burned by *Agni* and those who have not been so burned. The same hymn speaks also of

ये... देवत्रा जेहमाना होवाविदः सोमसद्वासो अर्कैः ।

They who attained divinity, who knew how to invoke gods and who carved out hymns with *riks*.

Hymn X. 154, though not exactly on the *Pitris*, gives us some further ideas as regards the qualifications that enabled the fathers to attain companionship with gods in heaven.

सोम एकैभ्यः पवते घृतमेक उपासते ।
 येभ्यो मधु प्रधावति तांश्चिदेवापि गच्छतात् ॥ १
 तपसा ये अनाष्टव्यास्तपसा ये स्वर्ग्ययुः ।
 तपो ये चक्रिरे महस्तांश्चिदेवापि गच्छतात् ॥ २
 ये युध्यन्ते प्रधनेषु शूरासो ये तनूत्यजः ।
 ये वा सहस्रदक्षिणास्तांश्चिदेवापि गच्छतात् ॥ ३
 ये चितपूर्वं ऋतसाप ऋतावान ऋतावृधः ।
 पितृन्तपस्वतो यम तांश्चिदेवापि गच्छतात् ॥ ४
 सहस्रणीथाः कवयो ये गोपायन्ति सूर्यम् ।
 ऋधीन्तपस्वतो यम तपोजाँ अपि गच्छतात् ॥ ५

For some the *soma* is purified; others sit near the *ghrita*. Those for whom the honey flows—let him (the spirit of the dead) even depart to them.—1.

Those who have become invincible through austerity; those who through austerity have gone to heaven; those who performed intense austerity—let him even depart to them —2.

Those heroes who fought in battles; those who sacrificed their lives; those who bestowed thousands of largesses—to them even let him depart.—3.

Those ancient fathers who founded sacrifices, who performed sacrifices and who promoted sacrifices—let him, O *Yama*, depart even to those austere fathers.—4.

The sages of a thousand hymns who protect the sun, the *Ris̥is* full of austerity, whose strength is austerity, O *Yama*, even to them let him depart.—5.

Though the fathers of different ranks are mentioned and though they are said to have distinguished themselves differently while on earth—some by practising religious austerity; some by fighting for the country; others again by bestowing thousands of largesses, from the *Rigveda* it does not appear that when in the sacrifices the fathers were invoked any difference was made as regards the respects shown to them. This was, however, done during the *Brāhmaṇa* period when a separate *पितृयज्ञः* was elaborated. I quote below from the *Salapatha Brāhmaṇa* II. 6. 1. 4 to 7:—

स पितृभ्यः सोमवद्भ्यः । षट्कपालं पुरोडाशं निर्वपति सोमाय वा पितृमते षड्वा-
चतवश्चतवः पितरस्तस्मात्षट्कपाल भवति ॥ ४

अथ पितृभ्यः वह्निषद्भ्यः । अन्वाहार्यपचने धानाः कुर्वन्ति ततोर्धाः पिंषन्त्यर्धा इत्येव
धाना अपिष्टा भवन्ति ता धानाः पितृभ्यः वह्निषद्भ्यः ॥ ५

अथ पितृभ्योऽग्निष्वात्तैः । निवाच्याये दुग्धे सकृदुपमयित एकशलाकया मन्यो भवति
सकृदु द्यौव पराञ्च पितरस्तस्मात्सकृदुपमयित भवत्येतानि हवींषि भवन्ति ॥ ६

तद्यो सोमेनेजानाः । ते पितरः सोमव्रत्तोऽय ये इतेन पक्वेन लोकं जयन्ति ते पितरो
वह्निषतोऽय ये ततो नान्यतरञ्चन यान्गिरेव दहन्त्स्वइयति ते पितराऽग्निष्वात्ता यतऽउत्तये-
पितरः ॥ ७

He for the पितरः सोमवन्तः or सोमः पितृमान् places *puruḍāṣ* on six pots-herds. The seasons are indeed six in number and the seasons are the fathers. Therefore the offering is in six-potsherds.—4.

Then they roast barley-grains on the *Anvīhāryapachana Agni* for the पितरः वह्निषद्भ्यः । They grind half of the grains and the other half remains unground. These grains are for the पितरः वह्निषद्भ्यः —5.

Then for the पितरः अग्निष्वात्ताः a porridge is made with the milk of a cow suckling an adopted calf, stirring it once only with a single splinter. The fathers have once for all departed. Hence it is stirred but once. These are oblations.—6.

The fathers who sacrificed with *soma* are the सोमवन्तः पितरः । Who attained heaven by offering cooked food are वह्निषद्भ्यः पितरः । They who offered neither the one nor the other and whom *Agni* tasted by burning are अग्निष्वात्ताः पितरः । These are the fathers.

This extract shows that the *S.B.* speaks of three classes of fathers. The सोमवन्तः who offered *soma* libation; the वह्निषद्भ्यः who in their sacrifices offered cooked food; and the अग्निष्वात्ताः who offered neither the one nor the other. This classification of the *Pitris* is not in accordance with the statements to be found in the *Rigveda*.

As regards the mythological theory of the *Pitris*, advanced by some western scholars, I think I need say very little. Because the word *Angiras* is derived from a root meaning charcoal—ignited sacrificial wood; because *Bhṛigu* means bright and *Vivasvan* brilliant, they must all, say these scholars, be luminous bodies—instances of the sun-myth. It did not strike

them that one of the greatest worshippers of *Agni* generated by enkindling *sami* or sacred wood, might very well be named *Angiras*; the inventor of the method of obtaining fire by moving one piece of wood against another *Bhrigu* or bright; and the king whose priest gathered fire from lightning, *Vivasvān* or brilliant. I also do not think that there is any reason to take the original signification of the *Pitris* to be mythological, because after their death they were more or less deified by their descendants and believed to have entered into the sun's rays or some of the heavenly bodies.

In one word my view is that the *Pitris* were originally human beings who, after death, were deified and their spirits were believed to have entered into heavenly bodies and their rays. While in this condition they were endowed with divine qualities. According to the mythologists, on the other hand, the *Pitris* were originally physical objects and powers that were afterwards more or less anthropomorphosed. My object, in these papers, is to point out that this theory is opposed to the belief of the *Ris̥is* themselves, and that my view gets support from their express statements. The life on earth of the *Pitris* and the Hero-gods has been regarded by them as the life in the mother's womb, that is their life on earth was their beginning. In other words, originally they were human beings. (See my paper on "Vivasān.")

It now remains to say a word to prevent a misapprehension. The statement made in this article regarding the *Pitris* does not support the theory of H. Spencer, Grant Allen and other theorists according to whom religion originated with ancestor-worship. Vedic religion, as we find it in the *Rigveda*, if anything for ever demolishes that theory. The foundation of ancestor-worship was no doubt laid in the Vedic religion. Mention is even made in the *Rigveda* of a separate *पितृयज्ञः* (X. 16-10) which was elaborated in the *Brahman̥s* and in the later religious treatises (Sat. Bra. II. 4. 2). But this was not the beginning of the Vedic religion. Ancestor-worship came in at a very late stage—in fact when that religion was going to have a natural death. The Vedic religion began not with ancestor-worship, but with the worship of the Heaven-father—*द्यौषित*. (See my article on the "Vedic Religion" in the *National Magazine*.)

The Hero-Gods of the Rigveda.

II.—KING VIVASVĀN.

INTRODUCTION.

I shall first deal with some preliminary points by way of introduction.

Apparently conflicting riks, how to be dealt with.—The following I think, should be the method in dealing with conflicting *riks* on the same subject. The method is a very simple but an exceedingly laborious one.

(i) All the *riks* on the same subject, say on a particular incident, *e.g.*, the three strides taken by *Viṣṇu*, scattered throughout the Rigveda, should first be collected and interpreted in the most natural way possible without any attempt to reconcile them with one another.

(ii) The *riks* should next be classified. Those that convey the same idea should be grouped together.

(iii) Then taking a general view of all the groups, it should be seen if they are really conflicting or represent different stages in the evolution of the same idea.

My experience is that if this method be followed, in most instances, the conflicting character will vanish away, revealing a progressive development of the same idea through different stages.

Method applied to the riks on the Pitṛis.—If this method be applied to the *riks* on the *Pitṛis* given in the general statement in my first paper, it will be found that they arrange themselves into two main groups.

A. One group of *riks* represent the *Pitṛis* as men, born on earth, begetting children, and doing such acts as men do, and dying like men.

B. The other group represent the same *Pitṛis* as gods, possessing such powers as gods only are believed to possess, and being invoked and adored very much in the same way as gods.

A little consideration will show that the two groups of *riks* are not really conflicting. The same beings who were mortals on earth, were after their death deified by their descendants. They have, therefore, been represented in the Rigveda in the double character of man and god.

Classification of the Vedic gods.—The first attempt at a classification of the Vedic gods is to be found in *Rik* I. 139. 11. The *rik* speaks of three classes of gods—each eleven in number.

ये देवासो दिव्येकादश स्य प्रथिव्यामथ्येकादश स्य ।

अप्सुतितो महिनैकादश स्य ते देवासो यज्ञमिमं जुषध्वं ॥ १ । १३९ । ११

Those gods who are eleven in heaven; eleven in the region of the earth; who eleven in number dwell in waters (= atmosphere) in their greatness; may they accept this sacrifice of ours.—I. 139. 11.

This classification of the gods is also to be found in the Atharva Veda.

ये देवाः दिविषदो अन्तर्द्विषदश्च ये ये च इमे भूम्यामधि । १० । ९ । १२

Those gods who dwell in heaven—those who dwell in the atmosphere—and who dwell on this earth.—X. 9. 12.

The etymologist *Yāska* in his *Nirukta* makes mention of a classification of the Vedic gods that was adopted by his predecessors. It appears that that also was based on the foregoing *rik* of the *Rigveda*.

तिष्ठ एव देवता इति नेरुक्ता अग्निः पृथिवीस्थानो वायुर्द्रो वातरिक्तस्थानः सूर्यो
दुस्थानस्तासां माहाभाष्यादैकैकस्या अग्निं वहूनि नाम धेयानि भवन्त्यपि वा कर्मपृथक्-
त्वाद्यया होताध्यर्च्युर्ब्रह्मोद्गातेत्येकस्य सतोपि वा पृथगेव स्युः पृथग्वि स्तुतयो भवन्ति
तथा अभिधानानि । ७ । ५ ।

There are three gods according to the *Nairuktāḥ*, namely, *Agni* whose place is the earth; *Vāyu* or *Indra* whose place is the atmosphere; *Sūrya* whose place is the heaven. Owing to their greatness each of them bears many names or this is on account of their different functions as the same man is called *Hotā*, *Adhvaryu* or *Brahmā*. Or the gods may be all different as they are separately praised and bear distinct names.—VII. 5.

The *Nairuktāḥ* not only divide the gods into the three classes of the celestial, atmospheric and earthly, but try to make out that in each sphere there is really only one god, who on account of his greatness or difference of functions is called by a variety of names. The *Rigveda* itself seems to speak of three representative gods of the three spheres.

सूर्यो नो दिवस्यातु वातो अन्तरिक्षः ।

अग्निर्नः पार्थिवेभ्यः ॥ १० । १५८ । १

May *Surya* (the sun) protect us from heaven; *Vata* from atmosphere and *Agni* from things on earth.—X. 158. 1.

This classification has been also adopted by the western scholars. But it cannot be denied that it is an extremely artificial one, not being based at all on any essential character. I think the following will be a much better classification.

A. Gods with physical objects and powers as their basis, e.g., *Dyaus*, *Surya*, *Varuna*, *Aditi*, *Agni*, the *Sarasvati*, the *Sindhu*, etc.

B. Hero-gods.—Illustrious *Pitris* or eminent Aryan leaders deified, e.g., *Vivāsvān*, *Yama*, *Viṣṇu*, *Trita*, *Indra*, *Brihaspati*, etc.

C. Abstract ideas impersonated, e.g., *Ṛaddhā*, *Manu*, *Anumati*, etc.

My idea of the Hero-gods generally is not new so far as the Indian authorities are concerned, though there may be a difference of opinion as to which of the Vedic gods should be placed under this class. The *Rigveda* itself speaks of this class of gods :

यज्ञेन यज्ञमयजन्त देवास्तानि धर्माणि प्रथमान्यासन् ।

ते ह नाकं महिमानः सचन्त यत्र पूर्वं साध्याः सन्ति देवाः ॥ १ । १६४ । ५०

The gods performed sacrifices by means of the adorable (*Agni*). These were the first sacred rites. Having attained greatness they reached the highest heaven, where the adorable gods lived (before).—I. 164. 50.

Remarks :—(1) यज्ञेन for यज्ञियेन, adorable; referring to god *Agni*. The word यज्ञ itself has also been used in the sense of *Agni*. My conclusion that this *rik* speaks of the attainment of divinity by the performance of sacrifice remains unshaken even if यज्ञ be taken in the ordinary sense of sacrifice.

(2) देवाः in the first line refers, no doubt, to the *Pitris* as the following *rik* will show :—

सहस्र एषां पितरश्च नेशिरे देवा देवेष्वदधुरपि क्रतुं । १० । ५६ । ४

The fathers also attained the glory of these (gods). Themselves gods they sacrificed to gods.—X. 56. 4.

(3) साध्याः worthy of adoration. In the passive and not in the active voice. The phrase “साध्य साधना” is used in this sense in every village. The ordinary meaning—those who attained divinity by austerity, though allowed by very high authorities, is simply an absurdity here. Evidently there is an antithesis between the देवाः (= पितरः देवाः) in the first line and the साध्याः देवाः in the second line. What becomes of it if both attained divinity by good work? Then if the gods who were already in heaven had attained divinity in this way, why should the sacrifices performed by the other set of gods afterwards, be spoken of as the प्रथमानि धर्माणि first sacred rites?

It should be noticed, however, that my conclusion remains intact in whichever way the *rik* be interpreted.

My view is again confirmed by the Bri. Ar. Upaniṣad.

स यो मनुष्याणां राक्षः ससृद्धो भवत्यन्येषामधिपतिः सर्वैर्मानुष्यैर्भोगैः सम्पन्नतमः
स मनुष्याणां परम आनन्दोऽथ ये शतं मनुष्याणामानन्दाः स एकः पितॄणां जितलोकानामानन्दोऽथ ये शतं पितॄणां जितलोकानामानन्दाः स एको गन्धर्वलोक आनन्दोऽथ ये शतं गन्धर्वलोक आनन्दाः स एक कर्मदेवानामानन्दो ये कर्मणा देवत्वमभिसम्पद्यन्ते । अथ ये शतं कर्मदेवानामानन्दाः स एक आजानदेवानामानन्दः ... १४ । ३ । ३३

If a man among men, is accomplished, wealthy, lord of others, best of all who possess all human enjoyments,—that is the highest blessing of men. A hundred such human blessings is one blessing of the fathers who have conquered the world of the Fathers. A hundred such blessings of the fathers who have conquered the world, is equal to one blessing in the *Gandharva* world. A hundred blessings in the *Gandharva* world, is one blessing of *Karmadevatās* who have attained godhead by good work. A hundred blessings of the *Karmadevatās*, is one blessing of the *Ājānadevatās* (born gods).—IV. 3. 33.

We will see afterwards that the *Gandharvas* referred to here, are the ordinary members of the family of king *Vivasvān* who is mentioned as the *Gandharva*—a god.

There is a distinct statement in the *Rigveda* that the *Ribhus*, the three sons of *Sudhanvan* became gods on account of their skill :

अथैत राजा असृत्स्य पंथां गच्छ देवानासृभवः सुहस्ताः । ४ । ३५ । ३
ये देवासो अभवता सुकृत्या श्रेणा इवेदधि दिवि निषेद ।
ते रत्नं धात श्रवसो नपातः सौधन्वना अभवतासृतासः ॥ ८

Then the deft-handed *Vijās* went by the path of immortality to the assemblage of gods.—IV. 35. 3.

Who became gods by their good work and sat in heaven like falcons. You sons of strength, give us riches; you sons of *Sudhanvan* have become immortals.—8.

King Vivasvān.

From evidence collected from the *Rigveda* and the *Avesta*, I hope to be able to establish beyond any doubt that *Vivasvān* was an Indu-Iranian

king who after his death was deified and identified with the sun. He was the first to sacrifice with *soma*-juice. It was during his reign that *Mātariçvā* gathered fire from lightning. He married twice. By *Saranyu* he got four children—a couple of twins—*Yama*, *Yamī* and the two *Açvins*. *Sāvarnā*, his second wife, bore him a son of the name of *Manu*.

1. *Vivasvān was the first sacrificer.*

A. त्वमग्ने प्रथमो मानरिश्चन आविर्भव सुक्रतूया विवस्वते ।

अरेजतां रोदसी होतृवृष्यज्ञोर्भारमयजो महो वषो ॥ १ । ३१ । ३

You *Agni*, first appeared to *Mātariçvā* for his skill—to *Vivasvān*. On your being elected *Hotā* the earth and the heaven trembled. You, however, sustained their weight, O shining one; you sacrificed to the great gods.—I. 31. 3.

अपामुपस्थे महिषा अमुभ्यत विशो राजानमुपतस्थुर्ऋमयं ।

आ दूतो अग्निमभरद्विस्वतो वैश्वानरं मातरिश्वा परावतः ॥ ६ । ८ । ४

In the first line of this verse the words “महिषाः” and “अमुभ्यत” are in the plural, and *Sāyaṇa* explains महिषाः as the mighty *Maruts*. I think महिषाः refers to मातरिश्वाः; plural for singular out of respect and to magnify the power of the god who seized *Agni* and brought him to *Vivasvān*. The “विशः”, I think, are the subjects of *Vivasvān* and राजानं refers to *Vivasvān* himself. The correct translation of the verse seems to me to be this:—

The mighty one (*Mātariçvā*) grasped *Agni* in the lap of waters (= celestial waters). The subjects stood near the king worthy to be glorified with *riks*. *Mātariçvā*, the messenger of *Vivasvān*, brought *Agni* *Vaiçvanara* from afar.—VI. 8. 4.

The ambiguity of the first line does not matter to us much here. It also does not matter here whether *Mātariçvā* be the wind. For, for our purpose we want only the second line and about it there is no ambiguity, the meaning being quite clear. It says that *Mātariçvā* acted as the messenger of *Vivasvān*. He brought *Agni* from a distant place, i.e., from heaven to this earth where *Vivasvān* and his subjects were awaiting.

अग्ने—

।

—स्वं ह्यसि पूर्यः शिशो दूतो विवस्वतो ॥ ८ । ३२ । ३

You indeed, O *Agni*, were the first beneficent messenger of *Vivasvān*.—VIII. 39. 3.

आयुं दूतं विवस्वतो विश्वा यश्चर्षणीरसि ।

आजक्षुः केतुमायवो भृगवाणं विशे विशे ॥ ४ । ७ । ४

Him (= *Agni*), the swift messenger of *Vivasvān* who rules over all the tillers (= people) of the world—The sons of *Ayu* placed in every house—the ensign of the great act of *Bhrigu*.—IV. 7. 4.

कत्रिरुदतिष्ठो विवस्वतः । ५ । ११ । ३

You (= *Agni*) came as a sage from *Vivasvān*.—V. 11. 3.

भुवदूतो विवस्वतो ॥ १० । २१ । ५

You (= *Agni*) became the messenger of *Vivasvān*.—X. 21. 5.

The fact of *Mātariṣvā* acting as a messenger of *Vivasvān* must not be confounded with *Agni* acting as the messenger of gods and men. दूतो . . . विवस्वतो . . . मातरिश्वा . . . in VI. 8. 4 means that *Mātariṣvā* acting as a messenger of king *Vivasvān* brought *Agni* from heaven—from afar. I shall show in a separate paper that what the vedic poet really means to say here, is that *Mātariṣvā*, a *Riṣi*—probably the priest of *Vivasvān*—obtained fire from lightning, i.e., from a hut or tree struck by lightning that had come from heaven—from afar. खं . . . दूतो . . . विवस्वतो in VIII. 39. 3 again tells us that *Agni* acted as messenger—was the medium of communication—first between *Vivasvān* and the gods and afterwards between men and gods generally. *Agni* was believed by the *Riṣis* to carry oblations and prayers from men to gods. For this reason he is called वज्रह्वयवाहनः (I. 44. 2; V. 11. 4, etc.).

B. That *Vivasvān* was an early performer of sacrifices, also follows from the fact that his name has been used in a number of *riks* as a generic term for sacrificers.

यूयु वाचं प्रमहे भगमहे गिर इन्द्राय सद्ने विवस्वतः । १ । ५३ । १

We will presently offer words of praise to mighty *Indra* in the house of *Vivasvān*.—I. 53. 1.

मन्त्रा सु स्वर्णर उतेन्द्र शर्यणावति ।

मन्त्रा विवस्वतो मतो ॥ ८ । ६ । ३९

And exhilarate, O *Indra*, in the sacrifice in which the *Soma* grown in the *Suryanavan* is offered; rejoice with *Vivasvān*'s hymn.—VIII. 6. 39.

युधेन्द्रो मद्वा वरिवश्चकार देवेभ्यः सत्यतिश्रृषणिप्राः ।

विवस्वतः सद्ने अथ तानि त्रिप्राः उक्थेभिः कवयो गृणन्ति ॥ ३ । ३४ । ७

Indra, the protector of the pious and the sustainer of the cultivators (i.e., the people) by mighty battles obtained booty for the gods (= the *Pitris* or the first worshippers of gods)—wise poets with hymns glorify those deeds of his, in the house of *Vivasvān*.—III. 34. 7.

See also *Riks* I. 46. 13; III. 51. 3 and X. 75. 1.

C. In the *Avesta*, *Vivasvān* (*Zn Vivanghvant*) is the 5th Iranian King and the father of *Yimo* (*Sans. Yama*). He was the first to perform the *Haomā* ceremony (= worshipping with the libation of the soma-juice). In the *Hom Yast* of the *Yasna* there is an interesting conversation between *Zarathustra* and *Haomā* (*Sans. Soma*), who had appeared before him in the form of a beautiful young man and asked him to pray to him and sing his praises as he was the holy one who driveth death afar. Thereupon *Zarathustra* after having done as bidden, asked *Haomā*—who had first prepared him for the good of the human race—how was he blessed and what was his gain. *Haomā* replied that *Vivanghvant* (*Sans. Vivasvān*) was the first man to prepare him for the good of the human race and for this he was blessed with a son named *Yimo* (*Sans. Yama*) the brilliant.

The *Rigveda* also tells us that *Vivasvān* was the first to prepare *soma*-libation and offer it to the gods, but this it does in its own peculiar round-about way.

With the expression *Haomā* driving death afar of *Hom Yast*, may be compared *Rik* VIII. 48. 3.

अपाम सोममृता अभूमागन्म औतिरविदाम देवान् ।

किं नूनमस्मान् कृणवदरातिः किमुधूर्तिरमृतमर्त्यस्य ॥ ८ । ४८ । ३

We have drunk *soma* and become immortal. We have come to light and found the gods. Verily what will our enemy do to us ? what, O immortals, will mortals' deception do to you ?—VIII. 48. 3.

2. *Vivasvān* had five children.—*Yama* and his twin sister *Yamī*, the two *Ācvin*s and *Manu*.

यम

।

विवस्वन्तं हुवे यः पिता ते ॥ १० । १४ । ५

I invoke *Vivasvān*, O *Yama*, who is your father.—X. 14. 5.

त्वष्टा दुहित्रे बहत्तु कृणोतीतीदं विश्वं भुवनं समेति ।

यमस्य माता पर्युह्यमाना महो जाया विवस्वतो ननाश ॥ १० । १७ । १

अपागूहन्नमृतां मर्त्यभ्यः कृत्वी सवर्णामददुर्विवस्वते ।

उताश्विनावभरद्यत्तदासीदजहादु द्वा मिथुना सरण्युः ॥ २

Tvāstā gives his daughter in marriage. For this all the world assembled together. After her marriage *Yama*'s mother, the wife of mighty *Vivasvān*, died.—X. 17. 1.

From the mortals they (the gods) concealed the immortal and making one like her gave her to *Vivasvān*. And *Saranyū* bore him the *Ācvin*s ; when that happened she left two twins.—2.

These two *ṛiks* have been considered very obscure—quite a riddle—and have been commented upon by many both in old and modern times. I shall presently point out what this obscurity is due to. But before this is done, it should be noticed that whether the verses be obscure or plain, it is clear that *Vivasvān* married twice and *Saranyū*, his first wife, bore him two twins, namely *Yama*, *Yamī* and the two *Ācvin*s.

As regards the obscurity of the *ṛiks*, it is due to the fondness of the *Ris̥is* for mysticism. A simple thing happened. *Vivasvān*'s wife *Saranyū* died after having borne to him a couple of twins. The *Ris̥is* deified her and so would not say she died. They used an ambiguous word ननाश from root नश which may be taken for "perished" or "disappeared" as we like. But enough hints have been given to enable us to decide in which way to take it. In the second verse we have अपागूहन् अमृतां मर्त्यभ्यः — the gods concealed the immortal from the mortals. The immortal lady or goddess is *Saranyū* and the mortals are *Vivasvān* and his relations and subjects. Why should there be this distinction in nature between the husband and the wife ? The only explanation is that *Vivasvān*, who was living on earth, was a mortal and so his people. *Saranyū*, whom the gods concealed from mortals' eyes, became a goddess after her death. Then comes सवर्णां कृत्वी विवस्वते अददुः । Having made सवर्णा (one of the same colour or nature) they gave her to *Vivasvān*. But similar to whose nature ? My view is of the same nature as *Vivasvān*, i.e., a mortal. Even if सवर्णा be taken for "of the same nature as *Saranyū*" it comes to the same thing. For the sentence can only mean "of the same nature as *Saranyū*" was before she was taken

away. In plain language, the *riks* mean—after having borne a couple of twins to her husband, *Saranyū* died and became an immortal—a goddess. *Vivasvān* married a second time.

The story told by *Sāyana* of *Saranyū* leaving her husband and going to *Uttarakuru* and turning into a mare where *Vivasvān* followed her in the form of a horse, is too childish to deserve any serious consideration. Evidently it was invented to explain the difficulty in connection with these two *riks* and the name *Açvins* by which two of *Saranyū*'s sons were known.

Hymn X. 10 tells us that *Yama* had a sister of the name of *Yamī* who once made an immoral proposal to him, but he declined saying—

न वा उ ते तन्वा तन्वं संपृच्छ्यां पापमाहुयः स्वसारं निगच्छात् । १० । १० । १२

The Avesta also speaks of a sister of *Yimo*.

Manu was another son of *Vivasvān*.

यथा मनौ विवस्वति सोमं शक्रापिवः सुतं । ८ । ५२ । १

Drink, O *Sakra*, the *soma* brewed for you, as you did in the sacrifice of *Manu*, son of *Vivasvān*.—VIII. 52. 1.

Vivasvān had *Manu* by his second wife *सवर्णा* ।

3. *Vivasvān's father*.—Neither the *Rigveda* nor the Avesta tells us directly who was the father of *Vivasvān*. But there are materials for making a fair guess. In *Ṛik* I. 61. 15 सूर्य has been spoken of as the son of स्वश्वः । सूर्य सौवश्वे ।

The word “स्वश्वः” means “having a good steed” and in this sense, as an adjective, it has been used in the *Rigveda* in several places. This is perhaps the only place in which it has been used as a proper name. But both in the *Rigveda* and in the Avesta—specially in the latter, there occur a large number of proper names—names of very exalted persons, ending in अश्वः (Sanskrit) or *aspa* (Zn). In the Avesta also *Hvaspa* (=Sans. स्वश्वः) occurs both as a proper name and as an adjective. There, however, it is not connected with the sun. But a corruption of this word in the Persian—*Haoshyangha* is mentioned. In the *Shahnama* of *Firdushi*, it is found in the form of *Houscheng*. *Houscheng* is there mentioned as the grand-father of *Djemshed* or *Yimo* (Sanskrit *Yama*) and father of *Thamauras* (i.e., the source of *thama*, *tama*, heat—the sun). We therefore find that both in the *Rigveda* and in the *Shahnama*, “स्वश्वः” has been mentioned as the father of the sun. We also find that in the *Shahnama* this sun has been mentioned as the father of *Yama*. The Avesta and the *Rigveda* tell us that *Yama* was the son of *Vivasvān*. It follows, therefore, that “स्वश्वः” was the father of *Vivasvān*.

The fact of स्वश्वः being mentioned in the *Rigveda* as the father of the sun, is a curious example of how words acquire new meanings and ideas are thereby expanded. स्वश्वः was a king. He had a son of the name of *Vivasvān*. This *Vivasvān* after his death, as we will see below, was deified and identified with the sun. Thereafter स्वश्वः was spoken of as the father of the sun. Here is another example: Owing to the scarcity of cows, their slaughter was forbidden by the *Ṛis̥is*. The cow गो became अघ्नना—what ought not to be slain. In course of time the clouds were also called

cows—they being milked by Indra to send down rain as cows are milked. Then the clouds also came to be called अन्नगा ।

त्रितः अन्नगायाः सूर्धनि इमं अग्निं अविन्दत् । १० । ४६ । ३

Triṭa found this *Agni* on the head of the cloud.—X. 46. 3.

Some philologists are of opinion that कश्यप and स्वश्व are the same word. If they are right the Rigveda and the Puranās agree as to the father of *Vivasvān*. For the Puranās all say that कश्यपः, son of मरीचि, was the father of the sun, i.e., of *Vivasvān*.

Sāyana finding that “स्वश्वः” was a king or *Riṣi*, and it would not do to say that the great celestial luminary was his son, cut the gordian knot by a single stroke of his pen. He, in all seriousness, related the story that once स्वश्वः desirous of a son prayed to सविता (an aspect of the sun). The god was so pleased that he himself was born as the son of the king. Without deciding whether this story deserves any serious consideration, it is to be noticed that it brings in the theory of incarnation, which is quite foreign both to the letter and spirit of the Rigveda. This theory did not make its appearance in India till the great struggle between Hinduism and Buddhism began.

4. *The name Vivasvān*.—The word is derived from वि + वस् to shine and means brilliant. There can be little doubt that king *Vivasvān* was so called, because during his reign *Matarīṣvā* gathered fire from lightning. *Vivasvān* is also a name of *Agni*. There are several instances in the Rigveda of the discoverers and the early worshippers of *Agni* being given names indicative of the attributes of *Agni*. Such are the names *Vivasvān* (brilliant), *Angiras* (charcoal), *Bhrigu* (shining), *Atri* (all-devourer). On the other hand *Agni* has been named after his worshippers. *Agni* has in this way been called *Bṛihaspati*, *Yama*, etc. There is nothing inexplicable in this. It is a most natural process that is daily resorted to in the scientific vocabulary.

अमूरः कविरदितिर्विवस्वान् सुसंसन्मित्रो अतिथिः शिवो नः ।

चित्रभानुसदृशं भायग्रेऽपं गर्भः प्रस्व आवित्रेण ॥ ७ । ९ । ३

He (= *Agni*) who is wise, a poet, *Aditi* (indivisible), *Vivasvān* (brilliant), a friend easily accessible, and an auspicious guest. He gives out rays of many colours and shines before dawn. The child of waters being born enters into the herbs.—VII. 9. 3.

5. *After his death Vivasvān was deified and identified with the sun.*

आ तेन यातं मनसो जवीयसा रथं यं वायुभवश्चक्ररश्मिना ।

यश्च योगे दृष्टिता जायते दिव उभे अहनी सुदिने विवस्वतः ॥ १० । ३९ । १२

Come, O *Aśvins*, in that chariot which is swifter than mind—made for you by the *Ribhus*—which, on being harnessed, the daughter of heaven (=dawn) makes her appearance, and both auspicious days (i.e., day and night) come from *Vivasvān* (=sun).—X. 39. 12.

When identified with the sun *Vivasvān* was, in most places, in the Rigveda called the *Gandharva* and his wife *Saranyū*, the *Apsarā*.

In Hymn X. 10, *Yama*, in declining the immoral proposal of his sister *Yamī*, says :—

गन्धर्वो अप्सव्या च योषा सा नो नाभिः परमं जामि तन्नौ । १० । १० । ४

The *Gandharva* of the (celestial) waters and the watery dame (i.e., the *Apsara*) are our parents. Such is our high kinship.—X. 10. 4.

6. By this double character of *Vivasvān*—a king while on earth and the sun after death and deification, we will be able to explain many a rik which, otherwise, were exceedingly obscure—almost unintelligible.

A. It was stated before that there are *riks* which indirectly bear out the statement of the *Avesta* that *Vivasvān* was the first to prepare the *soma*-juice, and offer it as libation to the gods. I shall now collect together these *riks*. In understanding these *riks*, it will be necessary to remember that the *Rigveda* at first speaks of one *Gandharvu* only and, later on, of the *Gandharvas* as a class. Probably the *Gandharvas* were a clan among the Aryan conquerors of the *Saptā Sindhavaḥ*, who afterwards settled in that part of the country known as “*Gāndhār*” now called *Kandahar* or near it. (See *Rāmāyana* VII. 100 and 101).

गभस्तिपूतः । ९ । ८६ । ३४

Soma is purified with the hands.—IX. 86. 34.

सृजन्ति त्वा दश क्षिपो हिन्वन्ति सप्तधीतयः ।

अनुविप्रा असादिषु ॥ ९ । ८ । ४

The ten swift fingers anoint you ; the seven ministers pour you out and the sages drink you and get exhilarated.—IX. 8. 4.

तमीमखीः समर्य आशुभृण्ति योषणो दश ।

स्वसार पार्यै दिवि ॥ ९ । १ । ७

On the day of *soma*-offering during the sacrifice, him (= *Soma*) indeed the maidens ten who are sisters, clasp.—IX. 1. 7.

यमत्यमिव वाजिनं सृजन्ति योषणो दश ।

वनेक्रीलन्तमत्यविं ॥ ९ । ६ । ५

On his passing to the woollen filter, ten maidens anoint him like a vigorous steed playing in a forest.—IX. 6. 5.

तं सानावधि जामयो हरिं हिन्वन्त्यद्रिभिः ।

हर्यतं भूरिचक्षसं ॥ ९ । २६ । ५

Him of green colour, beloved and many-eyed, the sisters are sending on to the filter by means of the grinding stones.—IX. 26. 5.

आदशभिर्विवस्वत इन्द्रःकोशमनुच्यवोत् ।

खेदयात्रिवृता दिवः ॥ ८ । ६१ । ८

Entreated by the ten of *Vivasvān*, *Indra* turned over the pail [of rain water] from heaven with the three-fold hammer.—VIII. 61. 8. [Ten = Ten fingers = ten maidens = *soma* prepared by them.]

नमिभिर्यो विवस्वतः शुभ्रो न मासृजे युवा ।

गाः कृष्वानो न निर्दिजं ॥ ९ । १४ । ५

Like a fair youth he has been anointed by the daughters of *Vivasvān*, making the milk as it were his body.—IX. 14. 5.

अधीक्षपा परिष्कृतो वाजा अभिप्रगाहते ।

यदि विवस्वतो धियो हरिं हिन्वन्ति यातवे ॥ ९ । १५ । २

Then purified by might he (= King *Soma*) goes towards the strength-giving libation [*soma* liquor] what time the fingers of *Vivasvān* make him of golden colour [*soma*-liquor], flow.—IX. 99. 2.

सप्त त्वा धीभिरस्वरन् हिन्वन्तीः सप्त जामयः ।

विप्रमाजा विवस्वतः ॥ ९ । १६ । ८

In the sacrifice performed by *Vivasvān*, the seven active sisters (priests) with hymns glorify you the wise one (= *Soma*).—IX. 66. 8.

तमश्चानसुरिजोर्धिया संवसानं विवस्वतः ।

पतिं वाचो अद्वाभ्यः ॥ ९ । २६ । ४

The fingers of both the arms of *Vivasvān* are sending him (= *Soma*) sitting in the vessel, the lord of speech and unconquerable.—IX. 26. 4.

गन्धर्व इत्या पदमस्य रक्षति पाति देवानां जनिमान्यङ्गुतः ।

शुभ्र्याति रिपुं निधया निधापतिः सुकृत्तमा मधुनो भक्तमाशत ॥ ९ । २७ । ४

In this way the *Gandharva* guards and protects his (= *Soma's*) place. Wonderful are the births of gods.

The lord of treasure (= *Soma*) seizes the enemy with the power of the treasure (= *soma*). The most pious ones partake of the ambrosial food.—IX. 83. 4.

Remarks.—In my interpretation of this *rik* I have differed somewhat from both *Sāyana* and the western scholars. “निधा” is generally understood to be “snare” and “निधापतिः” “lord of snare.” I think this is not correct. I have taken “निधा” to be “treasure” from “नि + धा” that is buried in the earth for protection. The treasure here is evidently *soma*. The *Gandharva Vivasvān* is “निधापतिः” “the lord of *soma*” kept in the sun and protected by him and other *Gandharvas*. But then what is “निधया रिपुं शुभ्र्याति”? I believe “निधया” = “सोमेन” means with the strength of the *soma*-juice with which *Indra* slew *Vritra*, the enemy of enemies.

सप्त स्वसारो अभिमातरः शिशुं नवं जज्ञानं जेन्यं विपश्चित् ।

अपां गन्धर्व दिव्यं नृचक्षसं सोमं विश्वस्य भुवनस्य राजसे ॥ ९ । २८ । ३६

The seven sisters (the seven priests)—mothers—nursed the new-born child of waters—*Soma*—who is wise, all-seeing, victorious, heavenly *Gandharva*, so that he may shine in the whole world.—IX. 86. 36.

पुनाति ते परिखुतं सोमं सूर्यस्य दुहिता ।

वारेण शश्वता तना ॥ ९ । १ । ६

By spreading an imperishable filter, the daughter of the sun purifies your juice, O Soma.—IX. 1. 6.

पर्जन्यवृद्धं मदिषं तं सूर्यस्य दुहिताभरत् ।

तं गन्धर्वाः प्रत्यभृन्तं सोमे रश्मादधुरिन्द्रायेन्दो परिस्त्र ॥ ९ । ११३ । ३

The daughter of the sun clasped the bull nourished by Parjanya (= Rain god). The Gandharvas seized Soma and put in him sweet juice. O Indu, flow for Indra's sake.—IX. 113. 3.

I have already collected, I fear, too many *riks* in one place without any explanation. These *riks*, again, are somewhat obscure and may appear to have been put together at random. But this is not so. They have been collected with considerable care. Taken together they form a highly interesting example of the development of an idea from one or two simple facts as a basis, to a stage so complex and obscure that its origin has become almost untraceable. I give below what, I think, to be its different stages and their connection.

(i) In the preparation of the soma-juice—*soma madhu*—from the shoots of the soma plant—*amsu*, the first stage was to pound the shoots with the grinding stones—*adribhik*. This was done with ten fingers of both hands. This simple fact has been expressed in the Vedic language as the king *Soma* being clasped by ten—the ten fingers of both hands—by ten maidens—by ten maiden sisters.

(ii) The pounded shoots were then steeped in water and allowed to ferment. The liquid thus obtained was poured over a filter made of lambs' wool. The filtration was known as *punina*, purification. In the Vedic language this was king *Soma* being मसृजे rubbed, cleansed or anointed by ten maiden sisters.

(iii) The last stage in the preparation of the soma-drink was to mix with this filtered liquid, milk, curd (= *dadhi*), barley-gruel, *madhu* (honey), etc. These things are said to be poured on the head of *Soma*. The drink thus prepared was आशिर of different sorts. The three most important *āciras* were *gavācira*, *dadhyācira* and *yavācira*. In the Vedic language the process of mixing with the filtered liquid, milk, etc., was the dressing of king *Soma*. He was supposed to have put on a rich apparel to attend a festival.

(iv) *Vivasvān* being the first man to prepare *soma* and offer it as a libation to the gods, the ten maidens were represented as his daughters.

(v) When after his death *Vivasvān* was deified and identified with the sun, *soma* and everything connected with his worship were transferred to the sun also. *Soma* was believed to be guarded by the *Gandharva* (= *Vivasvān*). The *soma*-liquor was now prepared not by the ten maiden daughters of *Vivasvān*, but by *Suryā*—daughter of *Surya* सूर्यस्य दुहिता ।

The last *rik* quoted above shows that as *Agni* has been named *Trita*, *Yama*, *Brihaspati*, etc., after his early worshippers, so *Soma* has been called *Gandharva* after the man who [as *Vivasvān*] first prepared and worshipped him.

The words “देवानां जनिसानि अमृतः” in *Rik* IX. 83. 4 and “शश्वता

वारेण" in *Rik* IX. 1. 6. require some explanation. *Sāyana* explains the first words thus :—

सोयं सोमो देवानां जनिमानि जन्मानि देवानित्यर्थः पाति रक्षति ।

अद्भुतो महान् । This explanation is of a doubtful character. It takes births of gods for gods and leaves अद्भुतः quite unconnected with anything. Griffiths takes जनिमानि for generations—an attempt evidently to give some meanings to *Sāyana's* words by taking advantage of the double meaning of the English word generation. But जनिमानि does not mean generations of gods in the sense in which he has used it. In the way I take it, the sentence is very simple. *Sāyana* is right in explaining जनिमानि as जन्मानि births. The word अद्भुतः is connected with जनिमानि । After the *Riṣi* had said that the *Gandharva* (= *Vivasvān*) guards and protects the place of *Soma*, he remembers who this *Gandharva* was—that at one time he was a mere man. Then he quietly gives expression to a thought—almost a sceptical thought—"wonderful are the ways these gods are born."

वारेण शश्वता in *Rik* IX. 1. 6. Hereto hangs a long story. Failing to understand who सूर्या, सूर्यस्य दुहिता was, the commentators have spent much ingenuity, poetry and scholarship on this *rik*. The S.B. explains सूर्यस्य दुहिता as "Çraddhā"—Faith. सूर्यस्य दुहितेति अद्वा वै सूर्यस्य दुहिता—the daughter of the sun verily is Faith. Depending chiefly on this *rik*, another commentator attempted to make out that the सोमसः of the *Riṣi*s was really भगवद्भक्ति—love of God. I have already shewn what the original basis of the idea was. But if *Suryā* was originally only the fingers of *Vivasvān*, the first performer of the *soma*-sacrifice, the *Haomā*, ceremony of the *Avesta*, it may be asked what does शश्वता वारेण—by the imperishable filter—mean? The answer is a simple one and we have here a curious example of the development of an idea by means of language—by the alteration in the meanings of words. It has already been stated that the *soma*-liquor was purified through a filter made of sheep's wool. The filter was called अव्यय, the word being derived from अवि (root अव) sheep. Now this word अव्यय also means unchangeable—imperishable. When the purification of the *Soma* came to be performed by the daughter of the sun—सूर्यस्य दुहिता the strainer अव्यय was taken in the latter sense and the expression used was वारेण शश्वता by the imperishable filter. Hymn IX. 1, from which the *rik* has been taken, was composed by *Madhucchandaḥ*, son of *Viçvāmitra* or of the family of *Viçvāmitra*. It may be compared with the following *rik* composed by *Viçvāmitra* himself.

आ सूर्यस्य दुहिता ततान अग्रे देवेभ्यस्तमज्जुयं । ३ । ५३ । १५

The daughter of the sun distributed among the gods the imperishable ambrosial food.—III. 53. 15.

Sāyana here explains सूर्यस्य दुहिता as the goddess of speech—*Logos*.

Vivasvān and the *Gandharva* are the same. [x. 10-4 and x. 14-1] While describing acts done by *Vivasvān* after he had been deified as the sun-god, he has far oftener been called the *Gandharva* than *Vivasvān*. In one or two places he has been called *Vena*—the beloved. The *Avesta* also speaks of a *Gandharva*—*Gandārewā*. A few disconnected statements are all that could be found about him. He is the keeper of the hell—*Vourakaša*—a fathomless boiling ocean. But he has also been called the son of *Ahura*, and the spirit of his son has been mentioned as the holy *Fravasi* of *Parasania*. It is interesting to note that in both the scriptures, *soma* is placed in charge of the *Gandharva* and brought thence to the earth by an eagle—showing the identity of the *Gandārewā* of the *Avesta* with the *Gandharva* of the *Rigveda*.

B. The best account of the *Gandharva*, i.e., *Vivasvān* as the sun-god, is given in hymn 123 of the tenth *mandal*. I give it below both in original and in translation. The *Vena*—the beloved is the *Gandharva*. The Hymn describes him at his birth as the rising sun.

HYMN 123, MANDAL X.

अयं वेनश्चोदयत् पुत्रिगर्भां ज्योतिर्नरायू रजसो विमाने ।
 इममपां संगमे सूर्यस्य शिशुं न विप्रा मतिभिरिहन्ति ॥ १
 समुद्रादूर्मिसुद्विषत् वेनो नभोजाः पृष्ठं हयंतस्य दर्शि ।
 ऋतस्य सानावधि बिभृषि चाटु समानं योनिमभ्यनूषत ब्राः ॥ २
 समानं पूर्वैरभि वावशानास्त्रिष्टुन्वत्सस्य मातरः सनीलाः ।
 ऋतस्य सानावधि चक्रमारुणा रिरहन्ति मध्वो अमृतस्य वाणीः ॥ ३
 जानन्तो रूपमकृपन्त विप्रा मृगस्य घोषं महिषस्य हि रमन् ।
 ऋतेन यन्तो आधिसिन्धुमस्युर्विदद्भन्वर्वो अमृतानि नाम ॥ ४
 अप्सरा जारमुपर्षिष्मयाणा योषा बिभर्ति परमे व्योमन् ।
 चरत्प्रियस्य योनिषु प्रियः सन्तुसीदत्यक्षे हिरण्ये स वेनः ॥ ५
 नाके सुपर्णमुप यत्ततन्तं दृढा वेनन्तो अभ्यवचत त्वा ।
 हिरण्यपत्तं वरुणस्य दूतं यमस्य योनौ शकुनं सुरण्यु ॥ ६
 ऊर्ध्वो गन्धर्वो आधि नाके अस्थात् प्रत्यङ् चित्रा विश्वदस्यापुधानि ।
 वसानो अतुक्तं सुरभिं दृष्टे कं स्वर्णं नाम जनत प्रियाणि ॥ ७
 द्रष्टुः समुद्रमभि यज्जिगाति पश्यन् मृध्नस्य चक्षसा विधर्मन् ।
 भानुः शुक्रेण शोचिषा चक्रानस्तृतीये चक्रे रजसि प्रियाणि ॥ ८

This *Vena* is the source of light. Staying in the region of the clouds, he sends down the children of *Prisni* (= Dark cloud; her children the Maruts—black storms—bring down rain). When the sun and the waters meet (i.e., in the morning) the sages caress him, the new-born child (literally lick as a cow licks her calf) with hymns.—1.

Vena born of the clouds, raises ripples out of the sea. The back of the beautiful one has been seen by men. He is shining in the sky—the place of waters. The singers (= the *Pitris*) are praising him who lives in the same place with them.—2.

The many mothers (= waters) of the calf, living in the same house (= sky) are yearning after him. On the top of the sky the whirling sounds of sweet waters are caressing *Vena*.—3.

The sages who knew his form are praising him. Verily they have heard the

roar of the mighty bull. Going in the right direction they settled on the banks of the *Sindhava*. The *Gandharva* knew the names of waters (= rivers).—4.

The water-nymph going to her lover smiling, is holding him in the highest heaven. She is moving about in the birthplace of her dear one. He, *Vena*, lovingly clasps her with his golden wings.—5.

Your praises, O *Vena*, loves you with their heart and see you in the place of *Yama*, as a bird with golden wings moving in the highest heaven and supporting the world—you, the messenger of *Varuṇa*.—6.

The *Gandharva* high in the highest heaven holding his beautiful weapons [rays of light conceived as flying arrows] is looking towards us. Putting on a sweet-smelling dress he creates the dear names (= names of waters = waters) as he creates light for our seeing.—7.

He looks with the eyes of an eagle in the sky, when like a golden drop he falls towards the ocean. His light, shining in the third heaven, with white rays, creates the dear names (= waters).—8.

It will be seen that both in the Rigveda and the Avesta *Vivasvān* as *Gandharva* is the master of a sea. In the Rigveda he is the sun—the bird with the golden wings, going across the aerial ocean. In the Avesta he is the keeper of the boiling ocean *Vourakaša* in the nether world. The 4th *ṛik* is of very great importance. It speaks of the coming of the *Pitris* to India and of their settling on the banks of the *Sindhu* (see my paper on *Viṣṇu*).

C. It is time that something should be said about the *Apsarās*. The subject is a difficult one and the materials to be found in the Rigveda, are hardly sufficient to come to any definite conclusion. The explanation given below is put forward merely as a suggestion. It was stated above that *Vivasvān* was called the *Gandharva*, probably because he belonged to a clan of the Aryans of that name. But I do not think that the women of these people, or of any other people, were originally known as *Apsarās*. Hymn X. 123 throws some light on the question of the origin of the name *Apsarā*. As mentioned before, the Rigveda at first spoke of only one *Gandharva* and he was king *Vivasvān* deified as the sun. In Hymn X. 123 he has been represented as a bird with golden wings—probably the *Garutmān* (Zn. *Garodman*) moving in the celestial sea. The waters of this sea were his joint mothers. The *Apsarā*, probably another bird “moving in the waters” (this is the meaning of the word *Apsarā*), was his wife. By the “*Apyā Joṣā*” in Hymn X. 19, is meant the same *Apsarā*. She is also the deified *Saranyū*, the daughter of *Ṛvāstā* and wife of *Vivasvān*. The name “*Saranyū*” is significant. It means moving waters, a stream. It is doubtful if this was the real name of *Yama*’s mother. I am rather inclined to believe that this was a fictitious name given to his wife, because *Vivasvān* had a good knowledge of rivers or waters.

विदद्मन्वर्षी अमृतानि नाम । १० । १२३ । ४

The names *Apsarā* and *Apyā Joṣā* were given to the wife of *Vivasvān* after his deification, I think because

- (i) His wife on earth was given the name “*Saranyū*.”
- (ii) He himself was after his deification represented as a bird moving in the aerial ocean, the waters of which were his mothers.

When in course of time all the members of *Vivasvān*’s family were deified and translated to the sun, there were in heaven not one *Gandharva* and one *Apsarā*, but many of them. The *Gandharvas* were supposed to be guarding the *soma*, and in place of *Suryā* alone, all the *Apsarās* living in the sun, now prepared that death-driving liquor. The *Gandharvas* and the *Apsarās* were next conceived as occupying both the celestial and the terres-

trial seas and rivers, lakes and brooks on earth. Finally in the Puraṇās they were believed to play the part of singers and dancing girls in Indra's palace on the one hand, and on the other hand to live in many reservoirs of water and in certain classes of trees on earth and allure young men and girls. The idea of their assuming mist-like forms, is probably connected with that of their living in waters; their low morality, with the *soma* drinking.

With this brief explanation I take up four *riks* of the seventh *mandal* in which the word "*Apsarā*" occurs. These *riks* are about the most difficult in the whole of the Rigved Samhitā.

त इन्द्रिष्यं हृदयस्य प्रकेतैः सहस्रवल्गुमभि सं चरन्ति ।

यमेन ततं परिधिं वयन्तोऽप्सरस उप सेदुर्वसिष्ठाः ॥ ७ । ३३ । ९

They (= the *Vasiṣṭhās*) indeed, with the wisdom of their heart, move about in the mysterious tree with a thousand branches.

The *Vasiṣṭhās* stand near the *Apsarās* who weave the garment of sacrifice out of the thread spun out by *Yama*.—VII. 33. 9.

विद्यतो ज्योतिः परि संजिहानं सिन्धवस्तथा यदपश्यतां त्वा ।

तत्ते जन्मोत्तैकं वसिष्ठगस्थो यत्त्वा विश आजभार ॥ १०

When *Mitra* and *Varuṇa* saw you diffusing the light of lightning—that was one of your births, O *Vasiṣṭha*; when *Agastya* placed you in every house.—10.

उतासि मेवावरुणो वसिष्ठोर्वशा ब्रह्मस्मनसोऽधिजातः ।

द्रष्टुं कृणुं ब्रह्मणा देवेन विश्वे देवाः पुष्करे त्वाददन्त ॥ ११

And, O *Vasiṣṭha*, you are the son of *Mitra* and *Varuṇa*—born on the hymn springing from the heart of *Apsarā Urvāṣi*.

The All-gods held you on a lotus when you were dropped as a seed, by means of a divine hymn.—11.

स प्रकेत उभयस्य प्रविद्धान् सहस्रदान उत वा सदानः ।

यमेन ततं परिधिं वयिष्यद्भ्रप्सरसः परि जज्ञे वसिष्ठः ॥ १२

He is wise; he knows well both this world and the next; he gives a thousand, yea, he gives everything. *Vasiṣṭha* was born of an *Apsarā* weaving the garment of sacrifice out of the thread spun out by *Yama*.—12.

I shall now try to explain these *riks*.

It will be seen that in *Rik* 9, the *Rṣi* speaks of the *Vasiṣṭhās* in plural—the sons of *Vasiṣṭha*. In the first line they are said to be moving about in the thousand-branched tree. *Rik* I. 24. 7 tells us that this tree is the sun, the rays of which are conceived as branches with heads downwards.

अबुध्रे राजा वरुणो वनस्योर्ध्वं स्तूपं ददते पूतदक्षः ।

नीचौनाः स्युस्तपरि बुध्रे यष्टामस्ते अन्तर्निहिताः केतवः स्युः ॥ १ । २४ । ७

King *Varuṇa* of pure strength holds up the vault over the forest, in the region without a bottom. These rays stand with their head downwards and their roots above. May they find a place within my heart.—I. 24. 7.

This is also the tree in the shade of which *Yama* enjoys the *soma*-drink with the gods and the *Pitris* mentioned in Hymn X. 135.

यस्मिन् वृक्षे सुपलाशे देवैः सपिवते यमः । १० । १३५ । १ (See my paper on the *Pitris*). In that paper it has been shewn that the *Pitris* were

believed to have entered into the rays of the sun. The first line therefore says that the *Vasiṣṭhās*, like other *Pitris*, are enjoying the *soma*-liquor in the company of *Yama*. The second line begins by saying that *Yama* spun out the thread of sacrifice, i.e., founded the institute of sacrifice. This is not exactly true. Both according to the *Rigveda* and the *Avesta* it was his father *Vivasvān* who did this. But we will see by-and-by that many acts have been ascribed to the father and the son indiscriminately. Then the *rik* goes on saying that out of the thread spun out by *Yama*, the *Apsarās* weave the garment of sacrifice, i.e., perform the sacrifice. This is very much the same as the daughter of the sun purifying *soma*—**पुनति सोमं सूर्यस्य दृहिता**, only instead of one *Apsarā* in the person of *Vivasvān's* daughter the **सहस्रवल्गुः सुपलाशः वृक्षः** is now full of *Apsarās*. The *Vasiṣṭhās* and other *Pitris* have all got their female companions.

In the next *rik* the word *Vasiṣṭha* is in the singular and means *Agni*. It describes an incidence very much the same as that of *Matarīṣva's* gathering fire from lightning. This time *Agastya* is said to have done this and placed *Agni* in every hearth.

In *Rik* 11 is contained a poetical and highly spiritualised description of the birth of *Agni* in a sacrifice performed by an *Apsarā* named *Urvāsi*. In substance, however, the description is very much the same as that of the generation of *Agni* by friction in an ordinary sacrifice. *Agni* is said to be born on a hymn springing from the heart of *Urvāsi*. The seed that fell as a drop was held by the All-gods with songs of praise, on a lotus. This *rik* may be compared with *Rik* VI. 16. 13 :—

त्वां अग्ने पुष्करात् अग्निं अथवां निरमन्थ ।

Atharvā churned you, O *Agni*, out of the lotus.

After what has already been said *Rik* 12 does not require any explanation. But it is necessary to say a word as to why *Agni* has been said to be the son of *Mitra* and *Varuṇa*. *Mitra* is the sun, and *Agni* may very well be regarded as a part or son of that source of heat and light. *Varuṇa* in one of his aspects is the celestial sea, and waters are the joint mother of *Agni* in the form of lightning. One of the names of *Agni* is “अर्पा गर्भः”—child of waters.

It is necessary to note the intimate relation between the *Gandharva* and waters. He is the son of waters and the “अप्या योषा” is his wife. This relation is based on three facts, two of which refer to the mortal life of *Vivasvān*, and the other to his life as a god.

(i) It has been stated in my paper on *Viṣṇu* that it was either *Vivasvān* or his son *Yama*, who brought the Irano-Indu-Aryans to India, following the course of the river *Sindhu*. This he could do as he had a good knowledge of the rivers.

(ii) In the preparation of the *soma*-liquor the most important step was the steeping of the pounded shoots of the *soma* plant in water. This act has been described in the most exaggerated poetical language—the ocean flowing to *soma*; the *Apsarās* going to *soma*, and the like.

समुद्रिया अप्सरसो मनीषिणसासीना अन्तरिभि सोमसत्तरत् । ९ । ७८ । ३

The *Apsarās* of the sea, sitting within the *Kalaṣi*, have flowed to *Soma* full of intelligence.—IX. 78. 3.

Vivasvān having been the first to prepare *soma*, his relation to waters was equally intimate.

(iii) After his death he was identified with the sun and was represented as a bird moving in the aerial sea.

D. I take another difficult passage to see if my interpretation of the *Gandharva* will explain it.

१ । १६३

दीर्घतमा औचथ्य । अश्वस्तुति । त्रिष्टुप् ॥

यदक्रन्तः प्रथमं जायमान उद्यन्त् समुद्राद्भूत वा पुरीषात् ।

यनेन पक्षा हरिणस्य बाहू उपस्तुत्यं सहि जातं ते अर्वन् ॥ १

यनेन दत्तं त्रित एनमायुनगिन्द्र एणं प्रथमो अश्वतिष्ठत् ।

गन्धर्वो अश्व रश्नामसृभ्णात् सूर्यादश्वं वसवो निरतष्ट ॥ २

असि यमो अस्यादित्यो अर्जुनसि त्रितो गुह्येन व्रतेन ।

असि सोमेन समया विप्रुक्त आहुक्ते त्रीणि दिवि बन्धनानि ॥ ३

When you neighed, being first born, from the sea or from the sand, you had the wings of the eagle and the arms of the deer. Your great birth, O horse, is worthy to be praised with hymns.—1.

Him the gift of *Yama*, *Trita* harnessed. *Indra* first rode on him. *Gandharva* grasped his bridle. O *Vasus*, you moulded him out of the sun.—2.

You are *Yama*, you are *Aditya* (=sun), O horse, you are *Trita* when the secret rite is performed. You are saturated with *soma*. They speak of your three bonds in the sky.—3.

This is a hymn on the horse of the horse-sacrifice. In this connection the *Gandharva*, *Yama* and *Trita* have been mentioned, because the first man to perform the sacrifice was the *Gandharva* (*Vivasvān*). After him his son *Yama* did it, and then *Aptya* *Trita*. These three persons, after their death, became gods and went up to heaven, where they are the three bonds of the horse. *Aditya* in the last but one line above = the sun = *Vivasvān*. Why *Indra* has not been mentioned as the fourth bond is of very great importance, and will be explained in my paper on *Indra*. According to the *Avesta* the first three *Haomā* sacrificers were *Vivanghant* (Sans. *Vivasvān*), *Yimo* (Sans. *Yama*), and *Athwa* *Thrita* (Sans. *Trita* *Aptya*).

E. The two following *ṛiks* are taken from the well-known marriage hymn—X. 85 :—

सोमः प्रथमो विविदे गंधर्वो विविद उत्तरः ।

तृतीयो अग्निष्ठे पतिस्तुरीयस्ते मनुष्यजाः ॥ ४०

सोमो ददद्गंधर्वाय गंधर्वो दददपुत्रे ।

रयिं च पुत्रांश्चादादग्निर्मह्यमथो हंसां ॥ ४१

Soma obtained you first ; next the *Gandharva* got you ; *Agni* was your third husband, and the son of man the fourth.—X. 85. 40.

Soma gave you to *Gandharva* and *Gandharva* to *Agni*. *Agni* has given me riches and sons and you as my wife.—41.

In the marriage hymn from which these two *ṛiks* have been quoted, the marriage of *Soma* and *Suryā* has been taken as the typical marriage. *Suryā* we have seen is the fingers of *Vivasvān* the first सोमः—*soma*-offering sacrificer, personified and regarded as his daughter, he himself being iden-

tified with the sun. In the present hymn, however, *Suryā* has been taken for the *soma*-liquor prepared by *Suryā*, and marriage has been regarded allegorically as the tasting of the liquor. In this sense *Suryā* was married first to king *Soma* to whom the liquor was offered as a libation. She was next married to *Vivasvān* who first prepared it and performed the *Haoma* ceremony. *Agni* got her then, and in the fourth place the human bride-room. The human bride was supposed to represent *Suryā*.

F. Hymn X. 139 consists of six *riks*, of which the first three are on *सविता* and the other three on *गन्धर्वः विश्वावसुः*. According to the ordinary interpretation it does not appear who *विश्वावसुः* is and why he and the *सविता* should be praised together. The thing becomes plain in the light of the explanation given before of the *गन्धर्वः*. *विश्वावसुः*—the all-treasure—can only be the sun of whom *सविता* is simply an aspect, and the *गन्धर्वः विश्वावसुः* is no other than *Vivasvān* or the *Gandharva* identified with the sun. The *riks* on *विश्वावसुः* are the following :—

विश्वावसुं सोम गंधर्वं आपो ददृशुषीस्तदृतेनाव्यायन् ।
तदन्ववैदिन्द्रो रारहाण आसां परि सूर्यस्य परिधौरपश्यत् ॥ ४
विश्वावसुरभितन्नो भृणातु दिव्यो गंधर्वो रजसो विमानः ।
यद्वा घा सत्यमुत यन्न विद्म धियो हिन्वानो धिय इन्द्रो अग्राः ॥ ५
सस्त्रिमविन्दश्चरणे नदीनामपादुणोद्गुरी अश्मन्नजानां ।
पासां गंधर्वो अमृतानि प्रोचदिन्द्रो दत्तां परि जानादहीनां ॥ ६

The waters, O *Soma*, saw the *Gandharva* *Biçvāvasu* and in accordance with Law, swell up to approach him. Then *Indra*, who delights in them, awoke and saw the rim of the sun.—4.

Gandharva *Viçvāvasu*, the measurer of the heavenly region, tells us that truth and all that we singers do not know. O inspirer of our thoughts, may you protect our rites.—5.

Indra obtained waters to fill up the channels of rivers. He opened the doors of the cow-stalls made of stone. The *Gandharva* told him of their (i.e., of the rivers) nectars—he (i.e., *Indra*) knew the power of the *Ahis*.—6.

This hymn, without the clue, we have obtained as to who the *Gandharva* is, was simply a puzzle to the commentators.

Rik 4 describes a tide and the rise of the sun. The waters see the sun and swell up. *Indra*, who lives in the clouds and delights with the waters, awoke and saw his rim. *Soma* is addressed in this connection as *Viçvāvasu* as *Vivasvān*, prepared him first and as the *Gandharva*, he guards him.

With *धिय हिन्वानः* in *Rik* 5 may be compared “*धियौ यो नः प्रचोदयात्*” in the *Gāyatri* verse.—*Rik* III. 62. 10.

In the 6th *rik* the most important sentence is

“गंधर्वः आसां (नदीनां) अमृतानि प्रोचत्”

Its signification has been pointed out in my paper on “*Viṣṇu*” which was read in the last meeting. It should be compared with *Rik* X. 123. 4.

“मृतेन यन्तो अग्निर्धुमस्युर्विदग्धर्वो अमृतानि नाय” ।

G. The last hymn I shall take up will be the 177th of the tenth *maṇḍal*. It is a small hymn consisting of only three *riks*, but is supposed to be extremely obscure. *Sāyaṇa* has spent much of his vedantic lore on it.

HYMN X. 177.

पतङ्गः प्राज्ञापत्यः । मायाभेदः ।

पतङ्गमक्तमसुरस्य मायया हृदा पश्यन्ति मनसा विपश्चितः ।

समुद्रे अन्तः कवयो वि चक्षते मरीचीनां पदमिच्छन्ति वेधसः ॥ १

पतङ्गो वाचं मनसा त्रिभर्ति तां गंधर्वोऽवदद्गर्भं अन्तः ।

तां द्योतमानां स्वयं मनोषासृतस्य पदे कवयो नि पान्ति ॥ २

अपश्यं गोपामनिपद्यमानमा च परा च पथिभिश्चरन्ति ।

स सग्रीचीः स विषूचीर्वसान आ वरीदति भुवनेष्वन्तः ॥ ३

Sages by their heart and mind, see the bird (=sun) adorned by the inscrutable power of the *Asura*. The poets see him within the (aerial) sea. Wise men desire to go to the place of his rays.—1.

The bird holds speech within his mind—which the *Gandharva* spoke while yet within his mother's womb; her (=speech) the bright heavenly intelligence, the poets guard at the seat of sacrifice.—2.

I saw the protector of light (=sun) who never stumbles coming near or going away in his paths. He, clothed in rays that tend towards a centre or diverge from it, travels repeatedly in a circle within the worlds.—3.

The subject of this hymn is said to be “*Māyābheda*”—the discernment of “*Māyā*” or illusion and the *Riṣi*, *Patanga*, son of *Prajāpati*. But the contents of the hymn leave no doubt that its deity is the sun regarded as a bird. As to who composed it, all we can say is that the third *rik* is identical with the 31st *rik* of the 164th hymn of the first *maṇḍal* of which *Dirghatama Ouchithyāḥ* is the composer.

In the first *rik* the word *असुरः* only requires explanation. I have elsewhere shown that the supreme *असुरः* of whom we get glimpses in many places of the *Rigveda*, is no other than the *Ahura Mazdā*—the great *Asura* of the *Avesta*. For our present purpose the second *rik* is the most important. It begins by saying that the sun holds within his mind the speech—the holy speech—words of *rik*—*चक्षुः अक्षरं* (I. 164. 39). This will be understood on comparing it with *धियो यो नः प्रचोदयात्* of the *Gāyatri* verse, and remembering that the *सविता* of that verse is simply an aspect of the sun—the all-generating side of him. “*तां गंधर्वोऽवदद्गर्भं अन्तः*” is also an explanation of the first portion of the verse *पतङ्गो वाचं मनसा त्रिभर्ति* from another point of view. To understand it we should remember first that the *Gandharva* (= *Vivasvān*) while on earth was the first sacrificer and as such was the first to utter the words of hymns. The next thing is to remember that the *Riṣis* believed in two births of men—one the mortal and the other the immortal. In connection with the immortal birth after death, the life of a man on earth, was regarded as life in the mother's womb. *गर्भं अन्तः* therefore means “while on earth living as a mortal.”

The hint of this explanation I got from the interpretation of a similar

passage—IV. 27. 1—by Pandit Umeç Chandra Batavyal in whom India has lost a most earnest Vedic scholar (see his *Veda Praveçikā*, p. 42). See also Ait. Upa II. 1-5.

गर्भं तु सन्निवृत्तमवेदमहं वेदानां जनिमानि विश्वा । ४ । २७ । १

Riṣi Vōmadeva, said to be the first *Prabuddha Riṣi*,—the first *Buddha* in the Religious History of India (see Bri. Aranya. I. 4. 10),—speaking of himself says :—

While yet in the mother's womb I have known all the births of these gods.—
IV. 27. 1.

In conclusion I collect together all the arguments which in my opinion conclusively prove that *Vivasvān* was originally a man and a king :—

- (1) *Matarīcīvā*, whether the wind or any other god or man, brought fire from afar—from heaven to king *Vivasvān* standing on earth surrounded by his subjects.
- (2) He is said to be a mortal from whom his wife *Saranyu*, become immortal on her death, was hidden.
- (3) *Vivasvān* in many places in the Rigveda is a generic name for sacrificers.
- (4) In the Avesta he is a king, who first performed the *Haoma* ceremony.
- (5) That he was the first to prepare the *soma*-juice and offer it as libation to gods also follows indirectly from statements to be found in the Rigveda.
- (6) His father *Svaçvaḥ* or *Kaçyapaḥ* is a man. The story told by *Sāyana* to get over this fact is no explanation.
- (7) The *Gandharva*, as *Vivasvān* was called after his deification, is said to have been the first to utter hymns while in the mother's womb, that is, during his mortal life on earth. This not only proves that *Vivasvān* was originally a man, but that he was the first sacrificer.

The Place of Woman in the Buddhist Church.

By Rai SARATCHANDRA DAS, Bahadur, C.I.E.

चित्तं यस्य स्फटिकविमलं नैव मृच्छति रागं
कारुण्याद्गै मनसि निखिलाः शोचिता येन दोषाः ।
अक्रोधेन स्वयमभिहतो येन संसारशत्रुः
सर्वत्रोऽसौ भवतु भवतां श्रेयसे निश्चलाय ॥ क्षेमेन्द्र ।

INTRODUCTION.

Woman, according to the Bible, is a divine gift to man. God first created man, and to make him happy, on a second thought, out of him, brought woman into existence. For we read in Gen. ii. 22: "And the rib which the Lord God had taken from man, made He a woman." And the woman, the mother of mankind, is said to have 'caused the fall of man.' These are but Shemitic legends, pure and simple.

In the *Pauranic* legends of the Hindus who represent the easternmost expansion of the Aryan race, there is a different story about the origin of humanity, in which we can but faintly trace some confirmation of the Biblical account. The Hindu conception of the origin of the fair sex appears to be more sublime than that of the Hebrews: because, when Brahma, the Supreme Being, created our first parents, the two are said to have been in one and the same body. The right half of this body represented the father of humanity and the left half, which was distinguished by a fairer moulding, its mother. This pair, in a single body, was called "Hara-Gauri" or "Gauri-Sankara." Then when they descended to this earth from their celestial residence, that composite figure became divided into two separate entities or individuals. Figuratively, Gauri and Sankara represented *Prakriti* and *Purusha*, i.e., mother and father, and metaphysically, the procreative-faculties. This complex picture of our first parents though ideal, illustrates the principle of union in holy wedlock and that there is no celibacy in Heaven, also that man and woman who are united spiritually on earth, form one body, on their return, to Heaven. In the Biblical account, God created man and made woman for man. In the Hindu conception, Brahma created both man and woman together at the same time, making one the help-mate of the other by the bond of love. It is this special divine gift that has elevated humanity above the rest of the creation where the carnal instinct alone operates.

So they were created as husband and wife. In the meaning of the word woman which is derived from the Anglo-Saxon, the root "*wif*" (in *wif-mann*) signifies a mate.

Curiously enough, the British people representing the westernmost expansion of the great Aryan race, whom Providence has brought into contact with the Hindus possess similar conception as to the origin of woman and her relation to man. The Englishman, unwittingly, calls his *wif-mann*, his better-half. As has been stated above, Gauri, the fair one, was the better-half of Sankara. In this very remarkable and happy coincidence, I mean in the expression "the better-half," lies in one sense, the real foundation of the great-

ness of the British people ; because they really know to honour the woman-kind. Thus, we see, that of all the great families in which humanity has been ethnologically divided, the Aryans conceived the highest ideal for woman. They made woman co-existent with man. The early Egyptians, the Greeks, the Romans, the Iranians and the Indians have all in their times of greatness honoured her. That small remnant of the Iranians surviving as it does, in the Parsees of India, also honours the fair sex. In later times, the Indians in their fall, imbibing Buddhist notions of the degradation of the fair sex, and afterwards borrowing Shemitic ideas concerning woman's subordination to man, seem to have lost sight of the lofty ideal about her that they were the first to conceive. By their neglect of that sacred duty to her, *i.e.*, the elevation of her fair nature by culture, they have earned the contempt of the civilized world. It is fortunate that the most enlightened section of the Indo-Germanic family should, at this stage of our downfall, have come to teach us, both by example and instruction, how to educate our daughters, for when we have placed them on an intellectual equality with ourselves they would prove our worthy help-mates as designed by Providence.

Buddhism, in which *Karma* does the work of the CREATOR and is recognised as the motive power causing evolution in all living organism, but which does not acknowledge the agency of that unseen hand called Providence or *Vidhātā*, preached the doctrine that woman was the prime cause of all the woes of man. It was she who tempted him to taste of the forbidden fruit.¹ Her charms lured him and her fascinating company brought on birth, old age and death ; in short, all the miseries of mundane existence. She was, therefore, to be avoided as the chief instrument in the hands of the Arch-tempter MĀRA, the God of Love, who leads all, only to the evils of transmigratory existence. All Buddhas to become Jina the Victorious One, must vanquish him.

The first story of the Avadāna Kalpalatā which begins with the *Ġloka* that heads this paper and in which Kṣemendra has set forth the loftiest ideal that Buddhism holds to humanity, explains the *Cityotpāda*—first conception of the principle on which Buddhism was founded, *i.e.*, the culture and disciplining of the mind for maintaining absolute control over the functions of the body, particularly the procreative faculty, and also to cut through all the bonds of love and affection which sweeten life. For this purpose man was better fitted than woman, he being stronger both physically and morally, and she being tender and weaker.² If he, by keeping company with her sunk to her level, the chances were that he would be born as a woman.

The youthful prince Siddhārtha, probably, in this belief deserted his loving wife at her child-birth when he should have been by her side. At this most critical period of her life, acting under a keen spiritual impulse, he not only left her, but absolutely renounced the world for the purpose of practising *Brahmacaryā*, *i.e.*, to lead a holy life in strict celibacy.

After attaining to supreme enlightenment, *i.e.*, the realization in thought, of the highest ideal of existence which he issaid to have done at the

¹ The forbidden fruit, figuratively, consisted of the work of the procreative instinct.

² In Tibetan, woman is called Kyé-men རྒྱལ་མེན (she of) inferior birth, and man is called Pho-kyé ཕོ་རྒྱལ་ masculine, *i.e.*, valourous-birth.

age of 35, under the *Bodhi Tree* at Bodhi Maṇḍa near Gayā, he preached that the supreme duty of man was to renounce worldly life for betaking himself to spiritual contemplation,¹ that being the only condition on which depended the possibility of his entrance to the way of *Nirvāṇa*,² i.e., immortality in *Viçuddhi* (absolute purity). In this doctrine was illustrated the possibility, as well as a fair opportunity, for all living beings of the world to attain to the state of Buddha by the efficacy of their *Karma* (activity in the right direction), after they have eventually become men in some birth. In paradise, where heavenly beings reside, enjoying all sorts of pleasures on account of the merits they had earned in some former existence, there is no opportunity to acquire fresh merit; consequently they, too, return to this world of ours when there still remain some little merits, at their credit, for further enjoyment in that land of bliss. They then transmigrate here. The position of the gods of paradise is similar to those of women here, for they, too, must be reborn as men and women to avail themselves of the opportunities of that favoured state, which in Tibetan is called *Dal-jor* (*very slowly acquired*), the birth as human beings.

Heavenly beings who return to this world at the expiration of their merits, are born as kings, queens, princes, etc., according to the measure of merits that was still left to their credit at the moment of their fall from heaven. The Hindu gods Brahmā, Viṣṇu, Çiva, Indra, and others who became *upāsakas* (votaries of Buddha) must, at the expiration of their merits, reborn as men. Then, they will be qualified to take up the vows of Buddhist renunciation and become monks *Bhikṣus*, for entering into the path of *Nirvāṇa*.

Admission into *Nirvāṇa* or the state of eternal peace, i.e., the kingdom of Heaven, in a Christian sense, can only be secured by *Viçuddhi*, perfect purification, i.e., absolute purging off of sin. Into this *Nirvāṇic*-Heaven only saints—such as Arhats and Buddhas, with the exception of *Bodhisattvas*, have admission. Here they form a truly divine communion of perfect equality; here there is no distinction of sex.

Tibetan Buddhism in its later or earlier *Tantrik* forms called *Sarma* or *Niā-ma*, makes the *Dharma Kāya* (spiritual form) of the Buddha to preside in this communion of saints under the name of *Vajra Dhara* or *Vajra Sattwa* in which the term *Vajra* symbolically signifies the absolute or the unchangeable One.

During the forty-six years of his Buddhahood, the Buddha unreservedly

¹ अनित्यः सर्वसंस्कार इत्यभ्यान्तविधायिनः ।

सर्वधर्म्मनिरात्मनः शान्त निवृत्तिमेवतत् ॥

² *Nirvāṇa* :—In the Tibetan version of the above *gloka*—

འདྲ་བྱེད་ཐམས་ཅད་མི་དག་ཉིད། འདི་ནི་འཕྲུལ་བ་མེད་པར་བྱེད།

ཆོས་རྣམས་ཐམས་ཅད་བརག་མེད་དང་། ཞིབ་བྱང་འདས་ཁོ་ན་ཡོད།

the word *Nirvāṇa* has been thus translated into Tibetan to mean liberation from sufferings or passed out of sufferings (བྱང་ན = sufferings and འདས passed out) ;

the words *Sarvadharmā*, i.e., ཆོས་རྣམས་། signify “all things.”

preached that the fair sex had no place in this heavenly communion, they deserved to be neglected, and that all married men should abandon their wives and children to their fate and then become monks. The story of Sundarī and Nanda in Journal B.T.S., Part III, 1896, illustrates his opinion of the womankind.

Woman being weaker in nature than man and therefore inferior to him, it was necessary for her to acquire merits by virtue of which she could be reborn as man. In her present life it was not possible for woman to rise to the level of man and thereby to be qualified to walk in the way to *Nirvāṇa*, nay, to attain to Buddhahood, in the manner he did. It was, therefore, essential for her to pray intensely and to acquire sufficient merit for becoming a man in her next birth. It was for this reason, that Buddha at the first stage of his religious career absolutely refused to admit women into the holy order of *Bhikṣu* which he had instituted especially for men.

A few years after his religion was accepted by the people of Magadha as an improvement upon Brāhminism, he established monastic institutions. When he paid a visit to his paternal home at Kapilavāstu, his wife Yaśodharā,¹ whom he had abandoned at child-birth, and his old foster-mother Mahaprajāpati entreated him to admit them into the order of *Bhikṣu* that they might enter a holy life. He, at first, hesitated to respond to their earnest solicitations, but at last, at the request of Ānanda, he yielded and instituted the order of nuns *Bhikṣuṇī* under heavy restrictions. After Buddha's death, Ānanda was openly blamed by Mahā Kaśyapa for having induced the great Master to give the vows of *Pravrajyā* (renunciation) to females, which was in contravention of the established principles of *Saṅgata Dharma* (Buddhism).

We read in the *Cullavaggo*² Mahā Kaśyapa's censure on Ānanda's conduct :—" This also, friend Ānanda, was done by thee, in that thou exertedst thyself to procure admission for women into the *Dhamma* and *Vinaya* proclaimed by the *Tathāgata*. Confess that fault." And Ānanda in reply said thus :—" That did I do, friend, thinking of Mahā Prajāpati the Gautamī, the sister of the Blessed One's mother, his nurse and comforter who gave him milk, how she, when she who had borne Him was dead, herself suckled Him as with mother's milk."

He was, accordingly, disqualified from obtaining the position of an Arhat for some years. The institution of nuns, however, never proved a success. It did not flourish in India or elsewhere in times gone by. In modern times Tibet, where Buddhism flourishes, claiming one-sixth of the population for monkish cloisters, possesses not even a thousand nuns in all her convents. We do not hear of the existence of nunneries in China, Japan, Burmah, Siam, or Ceylon. Buddhism having, in principle, totally ignored the womankind or rather aimed at the total extinction of the fair sex, could hardly have claimed votaries among them.

The Indian Aryans refused to accept the Buddhist doctrine which proclaimed the inferiority of the fair sex in no measured terms, and finally repudiated the religion itself, as unsuited to the genius of the people. This

¹ Prince Siddhārtha had proved himself a very good husband. He had married a wife of his own choice, whose virgin name was Gopā. She was variously called Yaśodharā for her excellent character, and Mṛgalocanā for her personal accomplishments. In the Tibetan version of the *Lalitavistāra* which is partly based on its earliest Chinese version we read an interesting anecdote of his marriage.

² See *Vinaya Texts*, Part III, Sacred Book of East, Vol. XX. Translated by Prof. T. W. Rhys Davids and H. Oldenburgh.

circumstance precluded the religion of Buddha from taking root in India. The masses to whom it appealed became indifferent, the prospect of the attainment of *Nirvāna* being too remote, and also because the fair sex remained devotedly attached to Brāhmanical gods who, it was believed, could give them wealth, honour, and prosperity. While continuing to observe Brāhmanical ceremonies and usages, they occasionally made presents and paid reverence to Buddha and to Buddhist priests, simply as works of merit. Even after the Brāhmanical deities had been admitted in its pantheon and their¹ heavens accepted as fit places for the Buddhist devotees to go to after death, Buddhism languished for centuries and then died a natural death.

During the period that the earlier form of Buddhism prevailed in India, attempts were made by some of its Brāhmanical leaders to popularize it by introducing some kind of radical changes based on broad, liberal and rational principles. This was the introduction of the Mahāyāna School, the tenets of which, though based on the teachings of Buddha, were altruistic in their conception and in principle. In this new form it flourished for some centuries, but its permitting relaxation in the observance of *vinaya* restrictions which were put on earlier monasticism, made the monks lose their moral discipline. In later times the higher and more intelligent classes lost all confidence in them and seldom admitted them into their houses and presence, and the public refused to give them alms.

In the Brāhmanical conception of Heavenly Existence, the fair sex occupies a prominent place. In the Heaven of Indra called *Vaijayanta*, which resembles the court of an oriental king, there are courtesans, the chief among whom are *Tilottamā*, *Aurvaṇi*, *Menakā* and *Rambhā*.

In *Çivaloka*, the god *Mahādeva* sits with *Çakti* in his embrace.

In the Heaven of *Viṣṇu*, the chief of the Hindu Triad, *Lakṣmī*, his beloved spouse, sits by his side.

• The blessed among men who get admission into these blissful regions by their merit and prayer, are generally, it is said, accompanied or followed by their wives. Sometimes they are welcomed by their wives in the event the latter should have preceded them. In fact, there is no place in heaven for those who on earth have led a single life.²

In *Vehest*, the paradise of Islam the Faithful, we are told, will get a loving welcome from the Heavenly Beauties. Earthly relationship, between husband and wife is not recognized in the Heaven of Islam, because holy men there are bestowed black-eyed hoaries for enjoyment.

In *Paradise*, the pious among the Christians enjoy life eternal. There they recognize those who on earth had been their beloved ones, but we are not told that in heaven matrimonial relations that are formed here at

¹ इति नन्दवचश्रुत्वा भगवान् रागनिर्भरम् ।

उपक्षिप्य प्रभावेण तं निनाय सुरालयम् ॥

अदृश्यच्च तत्रास्य लीलोदयाने शतक्रतोः । (क्षेमेन्द्र) ।

² नास्ति स्त्रीणां पृथग्धर्म्मो न व्रतं नाप्यपोषितम् ।

पतिं शुश्रुषते यत्तु तेन स्वर्गं सहीयते ॥ (मनुः) ।

सती च योषित् प्रकृतिश्च निश्चला ।

पुमांसमभ्येति भवान्तरेष्वपि (माघ, शिशुपालवध) ।

all stand good, because marriage is a civil contract among Christians. It is not strictly spiritual like what obtains with the Brāhman.¹

We are told that there are male and female angels in Heaven, who fly on their wings in moving through air like birds, but we are not told if Christian husbands and wives are again spiritually married on their return to the kingdom of Heaven.

In all these Heavens of Hindu, Mahomedan or Christian conception there are presidents, but in the Heaven of the Buddhists called the **Region of Peace**,² there is the **Holy Communion** of saints and Buddhas who have gone there after attaining to *Nirvāṇa*, i.e., being set free from all mundane sufferings.³ This resembles an ideal Commonwealth in which every individual is perfectly free, and where **Ārhats** and **Buddhas** live in peace to the end of time.

In later times on the development of the **Mahāyāna** School new paradises were conceived where Bodhisattvas, and the pious among gods and men were given access. The term of their residence there was always determined by the measure of their previously acquired merits and also that of the will-power called *Prañidhāna* they had exerted upon.

The chief among these heavenly mansions were the following: (1) **Tuṣita**, where every one lives in a state of ecstasy. **Bodhisattva Maitreya** at present presides over it as the **Vice-Regent**⁴ of Buddha. In the fullness of time, he will descend from there to be born as a Buddha in the manner the saintly spirit of **Çākya Muni** that was known in **Tuṣita** under the name of **Çveta Ketu**,⁵ had done.

The second paradise which is located somewhere in the western heaven is called **Sukhāvati** (that possessed of Bliss). Access is granted there to the male Buddhist saints of the **Mahāyāna** School and to the pious among men. Women have no place there. The following metrical translation of a passage from the *Sukhāvati Vyūha* gives an idea of the state of existence there:—

“Far to the west lies **Dewachan**,⁶
That happy land of Buddhist bliss;
Where reigns the saintly sovereign,
Amitābha, of Light-boundless.
Whoe’er His name in faith implores,
On rebirth gains that blessed land;
His dying eyes shall see the **Lord**—
The **Teacher** and his priestly band.

¹ But no one should be more afraid of entering Heaven than a polygamous *Kulin* Brāhman of Bengal, because of his many wives, to all of whom he was spiritually united and whom he had wronged and made miserable. It is a notorious fact that a Brāhman widow cannot remarry.

² In Tibetan ཞི་གནས

³ In Tibetan called བྱང་འདས་ or བྱང་ཆེན་པོ་འདས་པ་

⁴ In Tibetan called གྱུ་ལ་ཚབ་ Gyal-tshab.

⁵ In Tibetan རྩ་པ་དྲོལ་དཀར་

⁶ De-wa-chan བདེ་བ་ཅན་ (Sukhāvati).

No women there, nor fleshly birth ;
But from a diamond¹-lotus flower,
Bursts blooming forth the new-born soul.

In the glorious company of **Amitābha** our needs are few,
But food and drink and raiment rare
And alms-bowl all appear when wished.

The **Buddhas** of the quarters ten,
Unite in praise of **Dewa-chan** ;
Our prayer hence will e'er be this,
To be born in that **Paradise**."

(*B.T.J., Vol. IV, Part III*).

The following short dialogue between the Buddha and his favourite disciple-attendant **Ananda**, taken from the *Book of the Great Decease*, ch. V., clearly illustrates the position of woman in the Buddhist Church :—

Ananda :—" How are we to conduct ourselves, Lord, with regard to womankind ?

Buddha :—" Do not see them.

Ananda :—" But if we should see them, what are we to do ?

Buddha :—" Abstain from speech.

Ananda :—" But if they should speak to us, Lord, what are we to do ?

Buddha :—" Keep wide awake ! "

It is, therefore, clear from all authoritative and authentic works on Buddhism which I have consulted, that the place of **Woman** is lower than that of **Man**. She has no place either in the Buddhist church or in **Heaven**.

THE STORY OF SUNDARI AND NANDA.

Translated literally from Kṣemendra's Avadāna Kalpalatā.

2. Once upon a time Nanda, son of the king of the **Čākya**s, went to pay his respects to the Lord Buddha, then residing in a grove of Banyan trees in **Kapilavāstu**.

3. At the end of a conversation, in the course of which he delivered instructions on asceticism, the Lord gladly told Nanda to betake himself to the life of a **Bhikṣu**.

4. Nanda, after duly adoring and pleasing the Lord, replied, " O Lord, the ascetic life, although it is a means of acquiring merit, does not recommend itself to me."

5. " I shall serve the Church (**Bhikṣus**) with all possible objects of adoration."

8. Once afterwards Buddha came to the residence of Nanda accompanied by the **Bhikṣus**.

14. Receiving the adoration of the Prince, the Lord was about to retire.

15. Nanda, holding in his hand a golden pot filled with articles of worship, followed him up.

16. **Sundari**, his wife, who was quite unable to bear her husband's separation even for a moment, seeing him earnestly walking after the Lord, cast her side-long look at him.

17. She, unable to cast her quick glance towards her husband, who was walking along with the venerable Lord, stood in an inclined position, herself unobserved, with her eyes closed with fear, and spoke as if it were through silence, " Oh, dear husband, do not proceed further."

¹ *Padma sambbava*, *lit.* the lotus-born, *i.e.*, of holy or spiritual birth—this illustrates the glorious spiritual development of a saint immediately on his arrival at **Sukhāvatī**.

Diamond is a symbol of unchangeableness in Buddhism. It is called **Vajra**—signifying the venerable or holy.

18. Nanda beholding his lovely wife smitten with anxiety said to her that he would come back soon.

19. After a while, when the Lord arrived at his own hermitage, Nanda said to him that he would return home soon.

20. Then the Lord smilingly asked the prince, what it was that induced him to return home so soon.

26. O Prince, have a strict control over your passions, and take to a hermit's life, considering it capable of furnishing you with pleasure, etc.

28. Nanda heard these affectionate words of the Lord and influenced by love for his wife, meekly answered him as follows :—

29. "O Lord, my asceticism is due entirely to your favour, and to me the home is an object of pleasure only for the sake of the benefit I may thereby do to the *Bhikṣus*."

30. The Lord instructed him again and over again in religious observances.

33. Nanda at that moment put upon a brown cloth befitting a hermit, took up a drinking-pot, and looked beautiful with the signs of a great devotee (*upāsaka*).

35. Even in his ascetical life he held in his bosom the soft remembrance of his loving wife.

38. The prince, not being able to suffer his wife's separation and being quite impatient, did not forget her fair face.

39. He deeply reflected on the sweet, fine face of his wife without turning away his mind for a moment from her."

40. "Alas, I have been so much favoured by the Lord, yet religious purity does not come to my mind because of the love for my wife."

43. "O beloved Sundari, wait a moment. I shall soon return to your midst, so I told her when I left her.

48. "I do not know what the princess will do out of dissatisfaction for this first separation when she will see the cruel one, returning after a long time."

50. "Whenever I shall see the hermitage vacated by the Lord, I shall return home."

60. Nanda having slowly inscribed the face of Sundari on a piece of stone, began continually to talk of her and found in her an object of meditation.

62. He said to the Lord, "My heart which is much attached to my wife, does not find pleasure in the forest liked by the *Bhikṣus*."

63. Hearing these words of Nanda, the Lord Jina said : "O noble-hearted prince, you should not direct your mind towards the world : and having advised him to lead an ascetic life, he went away."

87. Being extremely sad at heart, he gave up asceticism and went away in his eagerness to see Sundari.

88. Then the omniscient Lord, through divine eyes, saw where Nanda was going, and all on a sudden came to him and said : "No use of desiring the company of woman, etc.

134. (At last) Nanda getting rid of all attachments and idle desires to live in society turned out to be a strict devotee.

137. (And said) O Lord, I have no use of Sundari.

139. Having found Nanda saying this and slowly getting penitent, the Lord thought of his success in the achievement of *Nirvāṇa*.

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The Islamic Conception of Sovereignty.

By MR. S. KHUDA BUKHSH, M.A., B.C.L., *Bar.-at-Law*.

In Islam the functions of the priest and the sovereign were concentrated in one and the same person. Mohammed was alike the prophet of God and the temporal ruler of the Arabs. Like the prophets of Israel he united in himself the two functions of the king and the spiritual chief. He was, so to speak, Cæsar and pope in one; and this feature of the Islamic sovereignty has continued to the latest times, though indeed with important changes and modifications. We do not for a moment suggest that circumstances were moulded and shaped to suit preconceived theories, but rather, as is always the case, theories were fashioned out of the events which took place. With the rise of the Abbasids begins the age of theories and speculation, since it was under them that the foreign influences slowly and silently commenced to leaven the entire social and political conditions of the Caliphate.

We propose to discuss in this paper the Islamic conception of sovereignty, but the bare statement of political theories without reference to facts which had called them into being would alike be barren and unprofitable. We, therefore, consider it necessary to discuss the theory of sovereignty in the light of the history of the Caliphate. The history of the Caliphate might be divided into three unequal parts, each, indeed, with strong characteristics of its own: The patriarchal period; the period of the Omayyads, or in other words, the rule of the Arab aristocracy; and the period of the Abbasids, or in other words, the rule of the Persians, the Turks and the Kurds.¹ By the patriarchal period we mean the Caliphate of Abu Bakr, Omar, Othman and Ali. During this period the strongest tie that united the Arabs was that of religion and conquest.

The Caliphs were the true successors of Mohammed in matters spiritual and temporal, and fully justified their position by their single-hearted devotion and loyalty to the cause of Islam. For them no consideration was so supreme and no interest so engrossing as that of Islam. Impelled by no other motive than that of the expansion of Islam and fighting the world in its cause, the question of succession, though keenly discussed even then, did not assume the importance and bearing which it did in the subsequent history of the Caliphate. After the death of the prophet, Islam was threatened with immediate destruction, and the question came to the front as to who should step into the place of Mohammed as the leader of the growing Islamic community. Opinion was divided. The Muhajirin and the Ansar would not agree and proposal was made that each party should select a leader of its own. But the fiery Omar—to whom Islam is more indebted than to anybody else after Mohammed—decided the fate of the day by offering homage to Abu Bakr, the father-in-law and the most trusted counsellor of the prophet. The die was cast and Abu Bakr was chosen. The dense cloud which hung over the Muslim horizon was thus

¹ Diercks, *Die Araber im mittelalter*, p. 85.

rolled away, and a crisis, which might have ended most fatally for Islam, averted.

As for this election it is necessary to note two things. Abu Bakr could not have been accepted as Caliph by the Muslim community if the idea of a hereditary succession, at all, then existed; for from the point of view of hereditary succession none was more entitled to the Caliphate than Ali, the husband of Fatima. In the second place it is to be borne in mind that when Omar had put Abu Bakr forward, as the successor of Mohammed, and had done homage to him, the devolution of authority was not perfectly complete till ratified, the following day, by the general homage of the Muslim community. The question naturally suggests itself whether Omar was at all guided by any principle or precedent in adopting the course that he did adopt, or was he induced to do so with a view to preventing a breach or division among the Muslims. For the solution of this question we find a most important key in the Pre-Islamite History of the Arabs. The Arabs, from time immemorial, have been averse to submitting to any authority or government of either a foreign foe or a native king, and though, no doubt, portions of Arabia came under the Roman rule or Persian hegemony, still Hegaz—the birthplace of Mohammed and the cradle of Islam—never bent its neck to the authority of an earthly sovereign. In its independence it always gloried, and with jealous pride it has preserved and maintained it to this day. The Arabs—divided into clans and tribes—acknowledged no authority other than that of their tribal chiefs, chosen and elected by the members of the tribe.¹ In the election of their chief they were guided mainly by seniority of age and nobility of birth.

It would not, therefore, be rash to conclude that in putting forward the candidature of Abu Bakr—the most senior and the most respected of the Muslims—Omar was only giving effect to a principle well established among the Arabs—the principle of seniority and nobility of birth. The succession of Omar was effected by the nomination of Abu Bakr, while that of Othman was decided by a conclave appointed by Omar. When Omar was mortally wounded he did not die on the spot but had sufficient time to make arrangements for the appointment of his successor. He appointed a Council of regency consisting of the most important companions of the prophet; viz., Ali, Othman, Zubair, Talha, Sa'd, Abdur Rahman ibn Auf. With these he associated his son Abdur Rahman but he expressly enjoined that Abdur Rahman was only to take part in the deliberations; specially was he to give his casting vote in case of an equal division but was on no account to stand as a candidate for the Caliphate. This fact, perhaps, is the strongest proof of the proposition that the idea of a hereditary monarchy did not then at all exist. Nor was it indeed conceivable; foreign as it was to the inherited traditions and deep-rooted sentiments of the Arabs. Ali comes fourth on the list, and the fact that he was passed over not once or twice but three times, makes it further clear beyond doubt that the idea of a hereditary succession was quite foreign and unknown at that time, and has been, much later, engrafted upon Islam to support the claims of the Abbasids. We shall consider, in the sequel, the importance of these various modes of succession.

Though no doubt attempt was made as early as the time of Muawiah to establish the hereditary Caliphate, but the elective principle

¹ Prof. Wallin's Journey from Cairo to Medina and Mekka, p. 180.

was so firmly planted among the Arabs, that the Omayyads—invested with large powers as they were—could not altogether disregard or override it. The suggestion to make the Caliphate a hereditary office was first made to Muawiah by Al Mughira bn Shu'bah—the earliest Muslim forger of false coins—and it was upon his advice that homage was obtained for Yazid during the life-time of the first Omayyad.¹ The founder of the Omayyad dynasty was the first to call himself king.² It called forth the bitter observation of Sa'id ibn Musyab: "May God retaliate upon Muawiah for he was the first who converted this thing (the rule over the faithful) into a *mulk*."³ There is a story which might be related here as indicating the feeling with which the Muslims regarded the Omayyads. Sad ibn Abi Wakkas presented himself before Muawiah, after the sovereignty of the latter had been confirmed, and saluted him as king. Muawiah, laughing, asked him what harm it would have done to have used the title "Commander of the Faithful?" Sad's answer was: "What! can you talk of this with a smile? I assure you that I had rather not have the post if it was to be acquired as you acquired it." This shows, says Zydan, that the Muslims did not like to connect the Caliphate with diplomacy and astuteness, and believed that the Omayyads had degraded Islam from religion to chauvinism and militarism, and thence to pure royalty.⁴ Though strenuous effort was made, both at the time of the Omayyads and the Abbasids, to make the Caliphate hereditary, it never, indeed, struck root among the people. Traditions were even forged but with no result.⁵ It was against the spirit of the age and the temper of the people.

We have the most clear and convincing proof of this in the fact that of the fourteen rulers of the Omayyad dynasty only four had their sons as successors. Similarly of the first twenty-four rulers of the House of Abbas only six had their sons as successors. The old Arabian idea of seniority lay in constant conflict with the natural zeal of the father to hand down the sovereignty to the son.⁶ Many individual cases prove the tenacity of the old Arabian right of election and the deep root that it had taken among the people. Abdul Malik proposed the election and homage of his two sons by a plebescite of the whole nation. To the governors of the provinces he issued orders to bring the whole weight of their official influence to bear upon, and conquer any opposition to it. In obedience to the Caliph's command, the governor of Mekka summoned the people together, but one of the most influential jurists of his age, Sa'id ibn Musyab, peremptorily declined to elect a successor during the life-time of a reigning sovereign. By threat and ill-treatment the governor sought to intimidate him, but Sa'id held fast to his proposition. The matter was reported to Abdul Malik who censured the conduct of the governor and wrote back: "Either you should immediately have beheaded the man or let him alone." The latter course was adopted and the old man was worried no more. The rule of succession was never settled or

¹ Goldziher, Muh. Studien, Vol. II, p. 32; Zydan, Umayyads and Abbasids. Prof. Margoliouth's translation, p. 61.

² Al-Yaqubi, II, p. 276.

³ Goldziher, II, p. 31.

⁴ Zydan, p. 250.

⁵ Suyuti, Tarikh-ul-Khulafa, Jarrett's translation, pp. 12-13; De Goeje, Frag. Hist. Arab, p. 216, Vol. I.

⁶ Von Kremer, Culturgeschichte des Orients, Vol. I, p. 385; Müller, Islam im Morgen und Abendland, Vol. I, p. 209. Von Kremer, Geschichte der herrschenden Ideen, p. 409.

well-defined, but the history of the Caliphate unmistakably proves that election by the people or nomination of a successor by the reigning sovereign, confirmed by the homage of the people, was regarded as the only valid title to the throne. We will not enter here into the details of the fraud by which Saffah outwitted the Alide claimant to the Caliphate; nor shall we discuss the ruthless policy of massacre and extermination of the Alides deliberately inaugurated and successfully carried out by Mansur. We shall here cite one instance of the sacredness attached to the oath of allegiance and homage to the sovereign-elect. The first thing that the Caliph Hadi did on his accession to the Caliphate was to cancel the succession of Harun-ur-Rashid and to transfer it to Ja'far, his son. Yahya ibn Khalid, alluding to this incident, told Hadi: "Commander of the Faithful, if you encourage people to violate their oaths, perjury will be thought lightly of by them; whereas if you let them abide by their allegiance to your brother and proclaim Ja'far as his successor, the sanctity of the oath of allegiance will be maintained."¹

Election and homage were looked upon as a sacred tie linking the sovereign to the people. Once the election was effected and homage done, the relation between the sovereign and the people was complete. An election was likened to an unseverable chain binding the electors to the sovereign-elect, and thus we find a very common saying: "Election lies heavy on my neck." It involved certain rights and certain duties, upon the faithful fulfilment of which depended the continuity of the relation. Even in this we cannot fail to find the traces of the relation of the tribal chiefs with the members of the tribe. We possess an address ascribed to Yazid III, and this document, which is worth its value in gold, indicates the thoroughly democratic idea which the Arabs entertained of the position of the Commander of the Faithful. Against his cousin Walid II, the debauchee and squanderer Yazid had organized an insurrection. He fell upon him in his country place and killed him. Alluding to this he said in his inaugural address: "By God! I have risen against him not for the gratification of any ambition or any worldly desire or any craving for sovereignty. I say this not out of vanity, for a sinner indeed am I, if God showeth not compassion on me. I took up arms purely out of zeal for God and his religion. I invited men to come back to the path of God and his revelation, to the sayings of the prophet, since the tokens of religion had been forgotten, traces of truth effaced, and the light of revelation quenched. Let it be publicly and openly avowed that Walid was a self-willed tyrant who considered permissible things that were forbidden, and indulged in every form of heresy; for he believed not in either the Day of Judgment or the Qur'an, though he was my cousin and kinsman. When I considered this I turned to God for counsel, and begged of Him to give no other helper than Himself, and prayed for His assistance. Many of His pious worshippers accordingly listened and hearkened unto me. I marched against the tyrant, and God delivered His people from his violence, not by any power of mine, but through His own grace. O people! I pledge myself to erect no buildings, to let out on lease none of your rivers, to build no palace, to hoard up no riches, to enrich neither wife nor child. From me is due to you your annuity year by year, and provisions, month by month, so that prosperity among Muslims may increase, and those who live far away may participate in it, just as well as those living near. Should I keep my promise you are in duty bound to listen to me, and cheer-

¹ Zydan, p. 192.

fully obey me, to support and protect me. If, on the other hand, I do not keep my word, you are free to depose me; only you should give me timely warning; and were I to improve, then accept my apology. Should you, however, know a man of tried temper, who willingly offers you what I have offered, choose then such an one, and if you so desire, I shall be the first to do him homage and render him obedience. O people! you are aware that no man is to be obeyed when he commands an act that is sinful. This is my address to you, and I pray God for forgiveness for myself and you.”¹

We might recall here the speech of Da’ud ibn Ali which is quite pertinent to the point we are making. When the Abbasid cause triumphed and their Caliphate was secured, Da’ud ibn Ali (the uncle of Suffah) addressed the people thus: “We pledge our word in the name of God the most High and the prophet and Al-Abbas, that we shall rule you in accordance with the ordinances of God and shall act towards you in accordance with the book of God and treat the high and the low as did the prophet.”²

It is obvious from these two speeches that the Arabs did not consider their ruler as a person who could not be questioned or taken to task for his action. In fact it is apparent that as against their homage and obedience they expected certain corresponding duties which the ruler was bound to fulfil. He was, so to speak, a steward responsible for his stewardship, and liable to dismissal for neglect or omission of his duties. Such seems to be the idea—shall we say the theoretical idea—entertained by the people, of the Caliph and his position. In theory at all events this notion of the position of the Caliph continued unaltered, and instances are not wanting when the pious and the God-fearing did not shrink from warning or rebuking the Caliph for acting unjustly or failing to come up to the standard of excellence expected of him. In this connection it will be interesting to quote here the reply of Sufyan Thauri on the occasion of an invitation to Baghdad by Harun-ur-Rashid to promote and do him honour. Thus replied Sufyan: “I write to tell thee that I break off all ties with thee and renounce thy love, and that thou hast rendered me a witness against thee in that thou hast in thy letter confessed against thyself that thou hast pounced on the treasury of the Muslims and expended what was therein where it was not due, and sent it to such as had no right to it; and not content with what thou didst at a distance from me, thou didst even write to me to make a witness against thyself; and such witness do I now bear, as do all my brethren such as saw thy letter, and on the morrow we shall present our witness against thee before God the just Judge. O, Harun! hast thou verily pounced upon the treasury of the Muslims without their leave? Hast thou for this the assent of those whose hearts are united, and those that are set in authority thereover in God’s earth, and those that fight in God’s path, and the son of the road? Hast thou the assent of them that carry the Qur’an in their minds and the men of knowledge? Hast thou the assent of the widows and the orphans or of any class of thy subjects.”³

The religious character of the Caliphate ends with the first four Caliphs. It was then a purely religious office held by men who had

¹ Mas’udi, Vol. V, p. 458 (my translation of Von Kremer in the Journal of the Muslim Institute, pp. 213—214, January-April Number, 1907).

² Ibn Athir, Vol. V, p. 317 (Tornberg’s Edition).

³ Damiri, II, p. 188, apud Zydani, p. 255.

staked all that was dear to them for the cause of Islam. They led the community at the prayers, distributed the poor-tax, performed other religious duties and only incidentally, as trustees and custodians of the faithful, administered the empire which was the maturity and consummation of an eventful history. Even when in the full tide of brilliant victories they never forgot their mission or neglected their duties. Such an apostolic succession, however, was not expected to continue for any length of time, and the change from a religious to political sovereignty was a matter of natural necessity. But the religious duties and the religious character of the Caliphate, though occasionally obscured and blinded, was never wholly lost. The appearances were always kept up even in the worst days of Omayyad lust and license. The religious aspect of the Caliphate, however, comes into greater and greater prominence during the declining years of the Abbasid dynasty, gaining greater and greater strength in proportion to the loss of political authority. The Omayyads, with the sole exception of Omar II were, and remained, Pagans at heart. They were the fiercest opponents of the prophet, and only made their submission to Islam for motives either of gain or fear of loss. Numerous companions of the prophet, *epigoni*, devotees, they killed in cold blood, and with a view to bringing contempt on the cause of Ali and his party they started the practice of cursing Ali from the pulpit and issued orders that every person on pain of death should curse him. The first person executed for not complying with this order was Hujr ibn Adi—the kindite in the time of Muawiah. The practice continued to the days of Omar II who abolished it. They openly defied the precepts of Islam, and in the lively pages of Von Kremer we have a most graphic picture of the license and excesses at the court of Damascus. Of such monstrous brood of vipers we will not be surprised to learn that the “Omayyad drunkard” Al-Walid ibn Yazid, when mad with drink, shot arrows at the Qur’an. There is a story that one night he looked for *Sors* in the Qur’an and opened the book at the words: “They asked for a decision. And disappointment shall overtake every rebellious tyrant, behind whom is Hell, where he shall be given to drink of pus.” He ordered the Qur’an to be hung up and took a bow and arrows and began to shoot at it till it was all torn to pieces. He then composed the following epigram:—

Thou tauntest the rebel and tyrant? Ah well,
A tyrant am I and prepared to rebel.
When thou meetest thy Lord on the last judgment morn
Then cry unto God, “By Walid I was torn.”¹

There was not a shred of religious feeling or religious sentiment among the Omayyads. By tyranny and oppression they had set their subjects against them and by their lawlessness and irreligion gave offence to the pious. Khurasan—the headquarters of the Alides and the centre of disaffection—took the lead in putting an end to their authority and in transferring it to the Abbasids. As regards the Omayyads it is to be noted that they never rested their claim to the Caliphate on any ground other than that of force. They had obtained it by force and fraud and with these two weapons they kept it as long as they could. Their rule was that of the Arab aristocracy with all its virtues and vices. Arabs to the core, they could believe in no source of authority other than that of election and homage. To it they firmly clung,

¹ Zydani, p. 104; Al-Fakri, p. 159.

and the speech of Yazid III, quoted above, is the best evidence of the temper of the times. The Abbasid Caliph stood, in contrast to the Omayyad king, as a religious chief who was not only the head of an hierarchy but the hierarch himself; the ruler not of the state but of the state church also. He was surrounded with theocratic nimbus and passed off as the Imam. In the spiritual affairs of the community he looked upon himself as the successor of the prophet, and as such, as the holder of an office established by God. While the Omayyads considered the sceptre and the seal as the insignia of their royal power, the Abbasid added to these the mantle of the prophet¹ which he is said to have given to Ka'b ibn Zuhair as a token of honour for his *Banat Su'ad*. This mantle the Abbasid wore when they first received the homage of their subjects and on all serious or festive occasions, but chiefly when they led the community at prayers. On important state ceremonials they appeared covered in this holy relic, and on special state occasions when it could not be used, they had it lying before them. Very different was the case with the Omayyads. Yazid ibn Walid did not consider it improper to appear even at the 'Id prayer in full military costume.² The Abbasids put religion under contribution with a view to secure their position with the people, and it is singular, indeed, how in process of time the Abbasid secured for themselves a respect and veneration which almost bordered on divinity. Long before the destruction of the Caliphate by Moguls—an institution hallowed by the faith of many generations—would it have perished had it not been for the theocratic nimbus which encircled the monarchical sceptre. People spoke of the 'light of the Caliphate,' even of the 'light of prophecy' which illumined the brow of the Caliph; while for the Caliphs of the patriarchal epoch the epithet of the 'best of the Quraish' sufficed. Abu Bakr would not even consent to adopting that title but the Abbasids allowed themselves to be addressed with a title which heretofore was merely applied to the prophet, 'the best of human beings.' The Abbasid Caliphs prided themselves on being God-appointed rulers on earth. Even as late as the eighth century of the A.H., the mock Caliph in Egypt, tolerated and maintained by the Mamluks, is addressed in a document as the representative of God on earth (*Naib ullah fi Ardhi hi*).³ With the extension of the Muslim Empire grew the difficulty of effectively ruling the provinces from the central authority at Baghdad. But this was not all—the religious enthusiasm that had united the Arab tribes into one great whole was soon lost and the more the foreign people entered as converts in the bosom of Islam the more the Caliphate lost its national Arab character. The influx of foreign nations—with their conflicting habits and traditions—awoke mutual rivalries and jealousies and called into being the feeling of nationality which, henceforward, became powerfully effective. The feeling of nationality, indeed, proved stronger than the tie of a common faith and made the first breach in the proud edifice of the Caliphate. The Persians in the east, the Berbers in the west who had been impatient of the yoke soon succeeded in getting rid of it and founding independent dynasties. The strength of the Caliphate hitherto rested upon the national feeling of the Arabs, but when this lost its original force and vitality and the Caliph sought the assistance of hired mercenaries—heedless of the cause in which their lances were hurled—the splendour of the throne and the sceptre rapidly disappeared. Weakness of the central authority, extension

¹ De Goeje, p. 208.

² Goldziher, p. 53, Vol. II.

³ Goldziher, Vol. II, p. 63.

of the Empire over large and widely separated tracts of countries, inability of an effective control, growth of the national feeling among foreign converts ; all contributed, indeed, to reduce the Caliphate to the shadow of a shade. It became the fallen ruins of an ancient magnificence. The time was ripe for the governors to assert their independence and found dynasties of their own. The bold and the adventurous availed themselves of the favourable conditions for the furtherance of their interest. Persian and Turkish dynasties sprang up in the bosom of the Caliphate,¹ and of such were these :—

THE PERSIAN DYNASTIES.

<i>Dynasty.</i>	<i>Province.</i>	<i>Duration.</i>	<i>Founder.</i>
Tahirides ..	.. Khurasan ..	.. 205—259	Tahir ibn-ul Hassan.
Saffarides ..	.. Fars ..	.. 254—290	Yaqub ibn al Laith.
Samanides ..	.. Transoxiana ..	.. 261—389	Nasr ibn Ahmed.
Sajides ..	.. Adherbijan ..	.. 266—348	Abu'lsa'j.
Ziyarides ..	.. Jurjan ..	.. 316—434	Mardawiy ibn Ziyar.

THE TURKISH PRINCIPALITIES.

<i>Dynasty.</i>	<i>Province.</i>	<i>Duration.</i>	<i>Founder.</i>
Tulinid ..	.. Egypt ..	.. 254—292	Ahmed ibn Tulun.
Ilekid ..	.. Turkistan ..	.. 320—560	Abdul Kazim Sabak.
Ikhshidi ..	.. Egypt ..	.. 323—358	Mohammed al Ikhshid.
Ghaznevid ..	.. Afghanistan and India	351—582	Alptakin.

Besides these there were other dynasties to which it is not necessary to refer here.

From the fair realms of the Caliphate these knightly adventurers carved out their fortunes, but remarkable, indeed, it is that though the Caliph was unable to protect himself or his empire, none of these felt themselves secure in the possession of their power until armed with a letter of acknowledgment from the Caliph. All, without exception, craved for and obtained confirmations of their authority from the pinchbeck successors of Saffah.

During the last decades of the Caliphate nothing was left to the Caliph of the extensive regal powers except the privileges of having his name engraved on the coin and mentioned from the pulpit. Coin and Khutbah (Al Sikka wal Khutbah) became a watchword and a byword for ridiculous formalities and meaningless splendour.² But puppet as the Caliph alternately was in the hands of the Persians, the Turks and the Kurds, his person was hedged round with a halo of sanctity which, in spite of repeated Caliph murders, was never wholly lost till the sack of Baghdad and the murder of the last of the Abbasids by Halaku Khan—the godless Mongol. In this connexion we might refer to a passage in the *Jama'i-ul Tawarikh* of Rashid-ud-din : “ Before setting out for Baghdad Halaku took counsel with the chief noblemen of his kingdom and his principal courtiers. Every one advised according to his light and leading. Hasam-ud-din, the astronomer of the Khan, was asked to fix a favourable time for setting out for Baghdad. The astronomer, emboldened by his residence at the court, formally pronounced unpropitious an enterprise which had for its aim an attack on the family of the Caliph and assault upon the city of

¹ Zydán, pp. 240—242.

² Al-Fakhri, p. 38.

Baghdad. In fact he said up to this time every king who had dared to march against Baghdad and the descendants of Abbas has maintained neither his throne nor his life. 'If the prince,' he added, 'refuses to listen to my advice and persists in his design, six serious misfortunes will be the result: (1) All the horses will die and the soldiers will be attacked with serious diseases; (2) the sun will not rise; (3) the rain will not fall; (4) violent wind will blow; (5) lands will no longer produce plants; (6) the great monarch will die in the course of the year.' On the other hand the *Bakhshis* (the Lamas) protested that an expedition against Baghdad was a perfectly legitimate expedition. Halaku then sent for Nasir-ud-din Tusi and asked his advice. Nasir-ud-din, frightened and thinking that they wanted to test (his loyalty) replied: 'Of all the misfortunes prophesied none will come to pass.' He further said: 'Halaku will be installed in the palace of the Caliph.' They then sent for Hasam-ud-din in order that he might discuss the matter with the *Khajah* who added: 'According to unanimous traditions of the Muslims several of the principal companions of the prophet died in defending their religion and yet no disaster or misfortune took place. If it is asserted that special prerogative attaches to the Caliph, my reply is that Tahir started from Khurasan, under orders from Mamun, and killed Amin, brother of Mamun. Mutawakkil, in concert with the Amirs, put his own son to death. Muntasar and Motazz were murdered by the Amirs and the pages. Several other Caliphs were killed without any disorder or irregularity in the natural course of things taking place.'"¹ This passage unequivocally demonstrates the feeling of awe and veneration entertained by the people towards the Caliph.

Thus do the facts stand in broad outline. Now let us proceed to the consideration of the theories evolved by Muslim jurists. Just as we find traces of Roman law in Muslim jurisprudence, so do we find unmistakable impress of Greek philosophy and political science in their speculations. It is undoubted that under the Abbasids Greek philosophy was studied in Arabic versions, and the Greek works, or at least some of them, were familiar enough to the Arabs. Thanks to Dieterici we now possess in print the model state of Al-Farabi, which is more or less an imitation of Plato's "Republic." Whether Al-Farabi had an opportunity of studying the Greek original is, perhaps, doubtful, but it is certain enough that he must have received some knowledge of Plato and Aristotle through the celebrated Christian *savant* Abu Bashar Anmatty, whose Arabic version of some of the writings of Aristotle has come down to us, and under whom Al-Farabi studied philosophy. Besides having Abu Bashar Anmatty as his master, Al-Farabi studied Logic under John, a Christian physician at Harran; and it is recorded that in a short time Al-Farabi excelled the best disciples of John.² But of the writers who have written on political science, as we understand it, we might mention Mawardi, Ibn Hazm, Ibn Jam'a, Ibn Khaldun and Al-Fakhri. Of these perhaps the most important is Mawardi, whose "Ahkam-us-Sultania" (Status Sultanica) divided in 20 chapters, we possess in print.³ He delivered lectures on jurisprudence for many years at Baghdad and Basra. Though offered *Kadiship* of several towns he refused, and was induced, only for a short time, to accept the chief

¹ Paris Edition, pp. 261—263.

² He died in A.H. 339 (950 A.D.). Nouvelle Biographie Universelle Sub. Al-Farabius; Qifti, Tarikh-ul-Hukama, ed. by Lippert, p. 45.

³ Wüstenfeld, Der Imam El Schafii, p. 265.

Kadhiship of Ustuwa in the neighbourhood of Nishapur. He died on the 27th of May, 1058. Ibn Jam'a is a much later writer. He was born in the year 639 A.H. (1238 A.D.) and died 773 A.H. (1371 A.D.). Mawardi divides the whole nation into two classes: the first embracing all those who possessed electoral powers, and the other who laid a claim to sovereignty. Mawardi discusses the subject from a purely theoretical point of view disregarding the actual political situation of the times. He considers the Caliphate an elective sovereignty, and lays down the necessary qualifications both for the electors as well as the candidates to the throne. Among the conditions, Mawardi, says Von Kremer, omits two which have been added by later jurists; for instance by Kadhi Baidhawi in his *Tawilul Anwar* and by Ghazzali in his *Ihya-ul-'Ulum* (Vol. I, p. 147): full manhood, or as we should say maturity, and the male sex.¹

As a natural outcome of the conception of elective sovereignty Mawardi regards the relation between the sovereign and the nation as a bilateral compact (*Iqd*); in other words he imposes certain duties and obligations on the sovereign as a consideration for the homage and obedience of the people. Philosophers from the earliest times have been divided upon the question of the origin of law and government. While one school found the origin of law and government in compulsion, the other found it in agreement. Both schools are of high antiquity and have been represented by many eminent names. One gathers from Plato that divers sophists maintained the former thesis. It is in substance not far from that assigned to Thrasymachus in the "Republic" where the sophist says that justice is nothing but the advantage of the stronger, and in later times Hobbes and Bentham are eminent among those who embrace it. The other view is most familiar to moderns from the writings of Rousseau.²

That Mawardi should have taken such a liberal and comprehensive view of politics is the most convincing proof of the high culture and civilization of the Arabs. Such ideas can only strike root and thrive among highly advanced nations.

The Arab jurists, along with election, recognised another mode of transmission of sovereignty, *viz.*, by the direction of the ruler himself when he nominated his successor. This view rested upon the historical precedents of the first Caliphs when such cases occurred. It was further conceded that the reigning Caliph could nominate two or three successors to follow one after another. Thus Harun appointed his three sons Amin, Mamun, and Mutamin to succeed to the Caliphate one after another. We need scarcely emphasise the apparent opposition between the two methods of transmission of sovereignty, *viz.*:—elective sovereignty and transmission of sovereignty by royal disposition. Elective franchise was due to the old Arabian custom of election to the tribal chieftainship by different tribes. The transmission of sovereignty by testamentary disposition, on the other hand, owed its origin to the too frequent instances of such transmission of sovereignty both among the first Caliphs as also among the Omayyads and Abbassides. But even when the reigning sovereign had appointed a successor, this arrangement had invariably to be confirmed by general election and homage; and no Caliph, appointing his son or kinsman as his successor, omitted to obtain the general homage by which popular approval was secured and supreme consecration obtained.³

¹ My translation, p. 223.

² Bryce, *Studies in History and Jurisprudence*, pp. 1-2, Vol. II.

³ My translation of Von Kremer, p. 224.

The jurists of later times tell us of a third mode of acquiring sovereignty, viz., election by force. (Al bait ul Qahiriyyah). By this they understood cases of sovereignty assumed by force as happened in times of an inter-regnum or anarchy, when no universally and lawfully acknowledged sovereign ruled, and a bold party-leader violently took possession of the throne and the army without election and homage of the people, or testamentary disposition either, and called upon the Muslim community to do obedience to him to avert anarchy or civil war. It did not matter in the least, says Ibn Jam'a, if this ruler was unlettered, unjust or vicious. But if another usurper rose against him and deprived him of his government, the victor was to be regarded as the rightful sovereign.¹ It is obvious from this that people had grown wiser by experience. They had learnt to take account of actual facts, and found best to accept them. The Muslim jurisprudence, in its final stage, gave an unconditional assent to the right of the stronger.

These were then the three modes, utterly opposed to each other, in which, according to Muslim jurists, sovereignty could be acquired. All these, indeed, were generalisations from facts only too familiar to Muslim publicists. We shall now hear what Ibn Hazm has to say on the subject: "The Sunnis, the Murjiah, the Shiahs and the Khawarij are all agreed as to the necessity of an *Imam* and as to the necessity of obedience to him on the part of the nation. To this the only exception is the Najdah sect of the *Khawarij* who deny the necessity of an *Imam* and hold that men should act justly among themselves. The opinion of this sect is worthless. Enough refutation of their argument is that all the sects we have mentioned are unanimous in holding them to be in error. Both the Qur'an and the traditions inculcate the necessity of an *Imam*. For instance God says: 'Obey ye God and obey ye the apostle and those in authority among you.' Many traditions, moreover, tell us of the obedience to the *Imam*, and the necessity of an *Imam* We know it intuitively, moreover, that it is impossible for the people to execute the ordinances of God as regards property, delicts, murder, marriage, divorce, etc. etc., to check the wrong-doer and to do justice to the wronged and oppressed, to inflict punishment and so on without the help of an *Imam*. Without an *Imam* none will undertake these duties; for one person or a company of men might desire a certain person to rule over them, while another person or company of men would not desire that he should rule over them, either because their judgment leads them to a different conclusion or simply from a spirit of opposition. This must necessarily happen, and it may be witnessed in countries that have no chief; where no right is secured or punishment (to the wrong-doer) dealt out, so much so that religion is nearly lost in most of such countries. Religion cannot be properly safeguarded unless its cause is entrusted to one or more person. Now, there are two courses open, that is, to have one or two or more persons as *Imams* at the same time. But to have two or more persons is open to all the objection already set out. Therefore the only way in which order can be established and maintained is to entrust affairs to a single man who should be virtuous, learned, a good administrator and possessing sufficient strength to see that the laws are carried out. But even if he were not as we have said, oppression and neglect of the law by one person, to be sure, is less harmful than by two or more Again, those who accept the necessity of an *Imam*, are agreed that it is not admissible that

¹ Ibn Jam'a, Tahrir-ul Ahkam, Fol. 7 and 8 (apud von Kremer).

there should be two *Imams* in the world at one and the same time and that only one *Imam* is it proper to have. Exceptions (to this general unanimity) are Mohammed ibn Karram-ul-Sijstani and Abu Sabah-ul-Samarqandi and their followers who sanction the existence of two *Imams* or more at one and the same time. Their defence is the saying of the *Ansar* who told the *Muhajirin* on the day of the *As-Saqifah*: "A ruler from us and a ruler from you." They also cite the cases of *Ali* and *Hasan* in their relation to *Muawiah*.¹ The Arabs had learnt the benefits of an ordered government, and it is for this reason that we find in their works an augmented emphasis laid upon the necessity of a government, even though it be despotic or tyrannical. *Tartushi*, a Spanish jurist, says that an unjust monarchy for 40 years is preferable to an hour of anarchy.²

The more political parties were gradually formed, the greater grew the diversity of opinion on vital questions of politics; the first and foremost among these was, indeed, the doctrine of election and succession to the throne. The party which adopted the convenient theory of letting matters stand as they were, was always the most numerous. This party assumed the name of the party of the *Sunnah*.³ They were always ready to accept accomplished facts and to recognise that Caliph as the legally elected one who had been chosen by the most influential persons in the capital. In opposition to these stood the strict legitimists who only recognised *Ali's* descendants as entitled to the Caliphate; while the *Kharjites*, as representatives of democratic ideas, appeared on the scene as fanatical puritans who defended the most opposite views. They maintained that every Muslim, provided he was pious and God-fearing, even though a peasant or a Nabatian, could be elected a Caliph of the Islamic community; and the most advanced party of the *Kharjites* even went the length of asserting that a sovereign or a Caliph was not necessary. In a learned spirit the conservative majority, as against these extreme views, sought to establish their principles, and early, indeed, did questions relating to the title to the Caliphate, sovereignty and succession to the throne become subjects of polemical discourse. As against the extremists, both of the democratic *Kharjites* and the legitimists (*Shi'ites*), the orthodox set up the doctrine that in such matters the highest authority rested with the community as a whole. In one of the oldest religio-political tracts (*Kitabul Luma*) it is expressly stated that it is not permissible to hold that the entire community could commit an error of judgment.

But modern jurisprudence understands by sovereign authority the person or body to whose directions the law attributes force, the person in whom resides, as of right, the ultimate power either of laying down general rules or of issuing isolated rules or commands whose authority is that of the law itself.⁴ Judged from this point of view the Muslim sovereignty was undoubtedly defective, the sovereign possessing no right or power to interfere with or alter or modify the Muslim law. Nor could the Muslim

Ibn Hazm, *Milal Wa Nahal*, Vol. IV, pp. 87 *et seq*; see the interesting paper of Wellhausen, *Ein gemeinwesen ohne obrigkeit*.

² Von Kremer, Vol. I, p. 19; Goldziher, II, p. 93; Ibn Khaldun, *Prolég.*, p. 82, note (2); *Ibid.*, pp. 321-2; Zydan, p. 127.

³ See Goldziher, Vol. II, pp. 92, 98, *Al-zuhri*.

⁴ Die *charidschiten*, p. 7; Von Kremer, *Geschichte der herrschenden Ideen*, p. 360; see Farazdaq, Boucher's ed., pp. 203 *et seq*; see Z.D.M.G. Vol. XIII, p. 605.

⁵ Bryce, Vol. II, p. 51.

jurists take such a comprehensive view of sovereignty as is taken by European jurists, accustomed as they are to limited monarchy or pure democracy. The Muslim sovereignty was unlimited in one way and absolutely fettered in another, inasmuch as interference with Muslim law would have been equivalent to a defiance of the law of God. But if it was narrow and confined in this respect it was far too wide and extensive in other ways. The power of the Muslim sovereign ranged over not merely temporal affairs of the state but also matters religious and social. He had to protect religion from heresies and innovations just as much as he had to defend the frontiers from foreign inroads and incursions. Here lay the strength as well as the weakness of the Muslim sovereignty. It was religion which prolonged the existence of the Caliphate till 1258, and it was religion again which hopelessly placed limitations and reservations on the powers which a beneficent monarchy might have exercised over the people by assisting the current of progress unimpeded by the fetters forged by religion and modifying and harmonizing the laws with the advancing civilization.

The union of religion and politics, beneficial as it is at the earliest stage of national existence, tends, as the national outlook is widened and the national horizon enlarged, to stunt progress and stereotype society. One of the greatest of modern political thinkers, Walter Bagehot, has most admirably described the situation, and it will not be out of place to hear him at this place: "How to get the obedience of men is a hard problem; what you do with that obedience is less critical. To gain that obedience, the primary condition is the identity, not the union but the sameness, of what we now call Church and State. Dr. Arnold, fresh from the study of Greek thought and Roman history, used to preach that this identity was the great cure for the misguided modern world. But he spoke to ears filled with other thoughts, and they hardly knew his meaning, much less heeded it. But though the teaching was wrong from the modern age to which it was applied, it was excellent for the old world, from which it was learnt. What is there requisite is a single government—call it Church or State as you like—regulating the whole of human life. No division of power is then endurable without danger, probably without destruction; the priest must not teach one thing and the king another; king must be priest and prophet king; the two must say the same, because they are the same. The idea of difference between spiritual penalties and legal penalties must never be awakened. Indeed, early Greek thought or early Roman thought would never have comprehended it. There was a kind of rough public opinion, and there were rough, very rough, hands which acted upon it. We now talk of political penalties and ecclesiastical prohibition, and social censure, but they were all one then."¹

With the Caliphate the distinction was never made between religion and politics. In Islam, theoretically, at all events, the two functions of the sovereign and the priest were inextricably interwoven with each other. Never was an attempt made to sever the two. Nor can any attempt be ever successfully made, as religion and politics are indissolubly bound up with each other. The Muslim sovereign has always been, and is to this day regarded as the representative of the prophet, if not the vicar of God. The institution of the Caliphate was the direct outcome of the religious teachings of Islam. The doctrine of the unity of God enforced the unity of man, and thus with the new religion a community of the faithful was formed

¹ Bagehot, *Physics and Politics*, pp. 16-17.

and a divinely-sanctioned government established, designed to gather all men into its bosom and to fight unto destruction the Paganism of the outer world. Here, as opposed to the theory of the mediæval empire, the priest and the king were merged in one person, *viz.*, in the Caliph.

Different was the case with the theory of the mediæval empire where under the emblem of the soul and body was the relation of the papal and imperial power presented to us throughout the middle ages. The Pope, as God's vicar in matters spiritual, was to lead men to eternal life; the Emperor, as vicar in matters temporal, had so to control them in their dealings with one another that they might be able to pursue undisturbed the spiritual life and thereby attain the supreme and common end of everlasting happiness. The functions of the Emperor were two-fold: to make the Christian people obedient to the priesthood and to execute priestly decrees upon heretics and sinners; abroad to propagate the faith among the heathen, not sparing to use carnal weapons.¹ The duties of the mediæval Emperor, like those of the Caliph, were eminently religious, but unlike the Caliph, he stood under the spiritual control, nay, the spiritual terrors, of an earthly religious potentate—the Pope. But the Caliph, on the other hand, though independent of a spiritual chief (being himself the spiritual head of the Muslim community), holding his powers as he did, by the title of election, was, in theory at least, responsible to the nation. This, to my mind, appears the most significant distinction between the position of the Caliph and the mediæval Emperor. We cannot enter here into a fuller and more exhaustive comparison of the two theories, but it is a subject which might profitably be studied and discussed.

To pass to the institution of the Caliphate. Whatever it became under the Omayyads and the Abbasids, its early career was a drama of sustained interest and equable and majestic evolution. Under the Patriarchal Caliphs it shed her consolations and extended her protection alike to the rich and the poor, the serf and the slave. But, in spite of her faults and failings, even under the Omayyads and the Abbasids, it can proudly claim the merit of having covered the whole range of its conquests with noble institutions of learning, broad capitals, marts of commerce, noble roads and spacious harbours. Even when sunk in deep decay and surrounded by the ruins and wreckage of its glorious days, it stood as an institution commanding the universal homage of the Muslim world. When in 1258 the sun of the Caliphate went down in thunder and storm and streams of innocent blood, the link which connected this institution with the Prophet of Arabia was rent asunder—never to be joined again. Thus passed away the most venerable institution of Islam, leaving behind it the most enduring monuments of arts, learning, architecture, and the still more enduring memory of its scientific achievements and military triumphs enshrined in the pages of history.

¹ Bryce, *Holy Roman Empire*, pp. 103, 104.

Rise and Fall of the Arab Dominion.

By PROF. H. A. SALMONÉ,¹ C.I.M.

Rarely, if ever, in the history of mankind has a more striking example been presented of the attainment of glory and power by a series of accidental circumstances and by the workings of the imagination and the determined will of a single individual than in the case of the foundation of the Arab Dominion and the establishment of the religion of Islām.

Muhammad came not into the world with a flourish of trumpets. No one knew, and indeed, he knew not himself at first, that he was to play so important a part in the world's history—an instance of individual greatness and the embodiment of national glory and religious enthusiasm. He remained obscure, and unheeded until the time arrived when he, so to speak, commanded attention. And this he did so effectually that he had the satisfaction of knowing, before his death, how firmly he had laid the foundation-stone of a Dominion which was destined to be among the greatest the world had ever known, and had sown the seeds of a religion, which spread with marvellous rapidity unto all the corners of the Old World.

The antecedents and life of the founder of Islām are too well known to require any detailed repetition; but it is necessary here to take cursory notice of a few facts, which may enable the reader to arrive at a just appreciation of the causes which led to the rise of the Arab Dominion and the promulgation of the Muslim faith.

Arab writers assert that Muhammad was a direct descendant of Ishmael. Be that as it may, his family was one of the most noble among the tribe of Al-Kuraish. Abdullah, his father, died a few days before his birth; and it should be mentioned that Muhammad was an only son. According to the custom, prevalent among the better classes of the Arabs, Muhammad was entrusted, soon after his birth, to a nurse of the name of Thueiba, and afterwards to Halima, who became greatly attached to her charge.

The first four years of Muhammad's life were spent in the company of his nurse, with the tribe of Bani Sād, in the desert not far from Mecca. During the sixth year he was with his mother Aminah at Mecca. She then took him to Medinah where she soon after died. His grandfather Abdul-mutallib then had sole charge of him until his death two years later.

It should be pointed out that at his death Abdullah, Muhammad's father, left but a poor inheritance and his widow and infant child. Abutalib his uncle, who was entrusted with the guardianship of the orphan,

¹ Professor of Arabic, King's College, London; author and writer; born 1860, at Beyrout, Syria; of Cretan parentage, deriving his family name from Mount Salmoné in Crete. For many years past he has laboured to draw public attention to the necessity of encouraging Oriental studies in England; his main endeavour has been to bring the East nearer to the West and to forward Imperial affairs. The Sultan of Turkey conferred on him the Companionship of the Imperial Order of Medjidie. *Publications*: An Arabic-English and English-Arabic Lexicon, 2 vols.; The Fall and Resurrection of Turkey; The Imperial Souvenir. His early death has been deplored by the "London Times." This paper "Rise and Fall of the Arab Dominion" is one of a series of very interesting papers which the author has not published. I have got it through the kindness of my friend Dr. Abdullah-al-Ma'mūn, Al-Suhrawardy, M.A., LL.D., etc., of the Calcutta Bar, lately Principal, Islamia College, Lahore.—*Sarat Ch. Das.*

was also, comparatively speaking, a poor man—so that at an early age Muhammad was obliged to work for his livelihood. Muhammad had that kind of affectionate nature, possessed by those favoured persons, who have the power of deeply loving the few, and are beloved and esteemed by all those with whom they come in contact. Even Sir W. Muir, an avowed enemy of Islām, cannot help giving an excellent character to Muhammad in his early youth :

“ Our authorities all agree in ascribing to the youth of Mahomet a correctness of deportment and purity of manners rare among the people of Mecca. His modesty is said to have been miraculously preserved Endowed with a refined mind and delicate taste, reserved and meditative, he lived much within himself, and the ponderings of his heart supplied occupation for leisure hours spent by men of a lower stamp in rude sports and profligacy. The fair character and honourable bearing of the unobtrusive youth won the approbation of his fellow-citizens; and he received the title, by common consent, of *Al-Amin*, ‘ the Faithful.’ ”

[F. J.] There can be no doubt that Muhammad from his early youth exhibited signs of great intelligence; but many boys shew great promise and afterwards disappear in the great ocean of commonality. What then are the causes which first led Muhammad to believe in himself, and then induced others to believe in him; and what are the means whereby he attained such unrivalled greatness?

Muhammad, it should be remembered, was of an excitable, even hysterical temperament. He was meditative and loved solitude. And it may be assumed that his occupation as a shepherd, helped to rouse those spiritual and poetical instincts, which always exist, though are often dormant in the human breast. Thus while tending his sheep or goats under the clear, blue sky of Mecca, his soul must have quickened with rapturous yearning to commune with the invisible author of the majestic universe. The calm and death-like silence of the desert doubtless spoke to the susceptible youth with a voice thrilling to the soul. Then the brilliant moon at night, attended by her court of shining stars, must have stirred Muhammad's heart until his mind peopled the whole universe with a creation which could only be the work of the Supreme God.

As to the epileptic fits to which he was subject when a child of four years old, it should be borne in mind that primitive Arab superstition regards the epileptic subject as possessed by evil spirits. This superstitious belief could not have been unknown to Muhammad, and it is not improbable that this trifling accident may have induced him to attribute his own visitation to angels from Heaven. The fact, moreover, that he was in character and disposition unlike all others with whom he came in contact; the respect and love shewn him by all, may have strengthened this belief. Again, the stimulus imparted to his ardent spirit in witnessing the fair at Ocätz, must have turned his mind towards higher things. This is alluded to in so happy a strain by a well-known English biographer of Muhammad that I cannot do better than quote his words :

“ The struggles for pre-eminence and the contests of eloquence, at the annual fair, must have possessed for the youthful Mahomet a more engrossing interest than the combat of arms. At these spectacles, while his patriotism was aroused and desire after personal distinction stimulated by the whole atmosphere of rivalry, he had rare opportunities of cultivating his own genius, and learning from the greatest masters and most perfect models, the art of poetry and the power of rhetoric. But another and a nobler lesson might be learned in the concourse at Ocätz. The Christianity, as well as the chivalry, of Arabia had representatives there; and, if we believe tradition, Mahomet while a boy heard Coss, the Bishop of Najrân, preach a purer creed than that of Mecca, in accents which agitated and aroused his soul. And many at that

fair, besides the venerable Coss, though influenced it may be by a less Catholic spirit, yet professed to believe in the same revelation from above, and preach the same good tidings. There, too, were Jews, serious and earnest men, surpassing the Christians in number, and equally with them appealing to an inspired Book. The scene thus annually witnessed by Mahomet as he advanced into mature years, had (we cannot doubt) a deep influence upon him. May there not have been here too the germ of his great catholic design; of that Faith around which the tribes of all Arabia were to rally?"

All this confirms the belief that accidental circumstances—trifling in themselves—gradually led Muhammad, viewing the lamentable state of religion of that time, to believe that he was chosen to fulfil a divine mission, the character of which was still undefined in his mind. But another trifling incident occurred to turn the current of Muhammad's thoughts. This was his meeting with the Nestorian monk Bahirā at Basra, while on a trading journey with his guardian and uncle Abu-Talib. He was then nine years of age, according to the Arab historian Ibn Athir. It is related by this writer, as well as by other Arab authors, that the monk, after gazing in young Muhammad intently and inquiring as to certain signs on his body, informed his uncle that the youth was destined for a high place of glory; and indeed the monk is reported to have expressed the belief that Muhammad was the divine apostle of God. Thirteen years later, while travelling on another mercantile expedition, for Khadijah the rich widow, whom he afterwards married, he met at the same place another monk who openly declared him to be a prophet. These incidents are elaborately dilated upon by his Arab biographers. But though there is evidently a good deal of exaggeration in the anecdotes, it cannot be doubted that Muhammad did meet with Christian monks during his early life and was greatly influenced by them. Is it not natural to suppose that the monk may have been struck by the young Muhammad's intelligent face, and have expressed his belief that the lad was destined for high places of honour? This, coming from a man respected for his learning, would have been sufficient for Muhammad's friends to magnify—especially after he had proclaimed his mission. In any case, all records tend to shew that Muhammad was deeply affected by this incident. Although he remained in doubt and hesitation until the age of forty it must be accepted that soon after his marriage to Khadijah, at the age of twenty-five, he knew that he was to play an important part on the world's stage.

This will suffice to shew the effect produced by the accident of circumstance.

The next point for consideration is what effect the workings of the imagination had in paving the way for the great revolution which was to follow.

It must always be borne in mind that among all primitive people, especially in the East, the imagination plays an important part in their lives; and naturally more credence is given by them to trifles than would be the case among civilized nations. Hence, no sooner did Muhammad fancy that he was a prodigy than he began slowly to form in his mind the materials of the structure of his future greatness. Credulity in things material, superstition regarding invisible causes of natural phenomena, were the characteristics of the nomad tribes of Arabia. Although inherently intelligent and possessed of great perceptive faculties, they were nevertheless susceptible and sensitive, easily influenced for good or evil by a commanding spirit. Everything points to the fact that Muhammad was endowed with a remarkable capacity of understanding his fellow-creatures; and like some of the great masters of ancient times was born with the power of rapidly arriving at

the natural consequence of a given cause and rightly deducing the effects of a certain action. The gradual dawn of his belief, which was the outcome of accident, that he was to be the instrument of a great cause and a factor in bringing about a revolution in the world, impelled him to study with increased interest all objects that came under his notice. This greatly helped to develop and perfect the natural talents which he possessed. His relatives and friends aided in maturing his belief in himself. They began to be awed by his "uniqueness" and superiority. The ball was set rolling.

With a mind such as Muhammad possessed it is impossible to conceive that he could have had any sympathy with the pagan religion of the people of Mecca. He looked around and reflected. The religion of the Jews seemed to him imperfect or wanting in finality, and he undoubtedly was more inclined to Christianity, but the abuses of that religion in his time had reached an excess which was abhorrent to his sense of the Divine. It is impossible to say what would have been the case had he been able to view Christianity in its higher and purer form. Was he to bring about a reform of religion or found a new one? Here was his first great perplexity.

Muhammad, however, was no dreamer. He knew right well that if he hoped to succeed as a religion reformer he must not be precipitate. It was not until he was forty-one years of age that he openly proclaimed himself a Prophet and the Apostle of God. He waited until he was sure of his grounds. There were many obstacles to overcome, many labours to be accomplished before he could attain his aim. He steadily worked until he knew that he possessed sufficient power to convince those around him that he was what he afterwards proved himself to be.

To arrive at a proper understanding as to the means which caused the marvellous and rapid rise of the Arab power and Islam, it is essential to form a thoroughly impartial view of the character which was the mortar for foundation-stones of the great structure of the Arab Dominion. It was the life and character of the man, more than anything else, which stimulated his immediate followers and infused into their veins the fire of conviction and nerved their spirits and enabled them to attain such unrivalled glory. It was this which bound them together by an unbreakable bond of unity.

Muhammad was an enthusiast but no impostor; an adventurer, may be, but no charlatan. There can be no doubt, moreover, that, at one period at least of his career, he honestly believed himself to be inspired. It is alleged that he played upon the credulity and ignorance of his followers. This may have been the case. But what great leader is there—be he a soldier, politician, or philosopher who has not exaggerated the powers he possessed either deliberately to serve an end or unintentionally, through conceit or vanity. Muhammad undoubtedly, apart from a natural ambition of becoming a ruler of men, knew that with such a warlike race as the Arabs, it was necessary for him to offer them more material advantages than the revelation of a future life in eternal bliss. Believing, rightly or wrongly, that the human mind is incapable of fully appreciating the Invisible and Divine, he at once set to work and invest future existence with an aspect which is both substantial and pleasing. He did not ask his followers to believe in the unfathomable, but he painted Paradise in the most glowing colours that the imagination of man could conceive.

The die was now cast. He had determined to carry out his aim and to succeed. Here, however, is an illustration of the power of human will.

He was persecuted at Mecca; but his persecution only added to his after-triumph. The early oppositions, which he encountered, served as a

pretext to unsheathe the sword ; but at first it was only in self-defence. The success which attended his early efforts imparted to the Arabs the belief that the hand of God smote the enemies of the new religions. Inspired with this belief his followers readily formed themselves into an aggressive army and with the fire of enthusiasm carried all before them. Among the inducements which Muhammad offered to his followers was their participation in the spoils of war. This fact in itself was sufficient to draw large numbers to his banner.

In Muhammad the Arabs found a leader as well as a divine messenger. It was the combination of the material with the spiritual which constituted Muhammad's power. As a founder of a religion only, he could never have gained so many staunch adherents : nor could he as the founder of a dominion only have attained his eventual success. Muhammad himself and Islām were the sole authors of the rise of the Arab Dominion.

Why should Islām have helped so materially in the foundation of the Arab Empire ? Undoubtedly because it is essentially a social as well as a religious institution ; and its doctrines, as dictated by Muhammad, had the power of rousing human ambition. The Arab character was particularly suited to receive the doctrines of Islām because they appealed to their understandings and feelings, not to their faith in the invisible and impossible. The Kurān, moreover, supplied the Arab with a code of law. It was a universal guide to them, spiritually, morally and socially. It has become their standard work of prose : their grammar and dictionary so to speak and their authority to which they refer for all matters. Islām, moreover, is a socialistic religion.

"Mahammedanism," says Bosworth Smith, "in fact, preaches equality almost as explicitly as does Christianity. 'No more pride in ancestry,' said Muhammad to the assembled Musalmans, the haughty Kuraish themselves among them : 'ye Musalmans are all brothers, all equal' ; and it must be admitted that Mahammedans have, from whatever causes, acted up to their creed in this respect more fully than have Christians. In India, for instance, Mahommedans make converts by hundreds from among the Hindus, while Christians with difficulty make ten, and this partly at least because they receive their converts on terms of entire social equality, while Europeans, in spite of all the efforts of missionaries to the contrary, seem either unwilling or unable to treat their converts as other than inferiors. The Hindu who becomes a Christian loses, therefore, his own cherished caste without being admitted into that of his rulers. The Hindu who turns Mahammedan loses his narrow caste, but he becomes a member of the wide brotherhood of Islām."

Another matter which assisted the establishment of Islām and the empire was the remarkable diction of the Kurān. Muhammad appealed to the Arabs in Arabic, the language of their race, which fact has the power of stimulating enthusiasm. Mark the influence which poets and orators, at all times and places, have exercised upon the literature, language, character, tendencies, superstition and beliefs of nations. How often has an eloquent appeal to the emotions led men to sacrifice their lives in a cause !

Religious enthusiasm has claimed many thousand victims and martyrs. Patriotism was, and often is the cause by which men united, gathered strength, fought and conquered. Duty and honour, which are inherent in human nature, have often reconciled men to death. "The attachment," says Gibbon, "of the Roman troops to their standards, was inspired by the united influence of religion and honour." Muhammad appealed to the

religious enthusiasm, to the patriotism, to the sense of honour and duty of the Arabs. He also appealed to their ambition, to their avarice and to their self-love. The Arabs, moreover, were astounded at the beauty of the language Muhammad employed in the Kurān. No wonder they believed it to be directly inspired. In Surah II, it is written, "If ye be in doubt as to the revelation which we have made known to our servant, produce a work like unto it."

Let us for a moment consider the other side of Muhammad's character. There were certainly imperfections in it. He was weak, which is only to say he was human. He took advantage of every chance and opportunity to further his aims, which is only to say he was sagacious. He enjoyed the benefits and pleasures of life, which is only to say he was a man: he did not pretend to be more. He was abstemious, simple in his living and dress: nor did he pretend to perform miracles. We find in Surah XIII, "The unbelievers say, unless a sign be sent down with him from his Lord, we will not believe. Thou art, however, only a preacher, O Muhammad!" The miracles attributed to him were only the phantoms of the imaginations of his after-followers. The only miracle that Muhammad performed was the production of the Kurān.

It is a common belief that the Kurān is responsible for the existence of slavery. This is most emphatically untrue. The whole spirit of the book condemns it. Slavery existed among the early Arabs in the same way that it existed in Europe and America even to a comparatively recent date, in spite of civilization. But I must reserve to another occasion the treatment of this subject, and that of polygamy.

It has been alleged that Muhammad was sensual and licentious. There is absolutely no warrant for making such an assertion—bearing in mind the moral state of the Arabs at his time. Judgment and inference proceed by comparison. Muhammad did a great deal to raise the position of women. He laid strict laws for divorce. In his farewell visit to mount Arafat he addressed the pilgrims assembled, saying: "O ye people, ye have rights over your wives and they have rights over you. Treat your wives with kindness: verily ye have taken them on the security of God, and have made them lawful unto you by His words." If he should have himself gone into excesses, it should be remembered that they were not considered so in his time and in that country. But it can be safely asserted that no man of mark, since the foundation of Islām, had a greater respect for women and a keener appreciation of the beneficial influence of their gentle nature than Muhammad. Witness his grateful remembrance of his nurse Halima, the reverent love which he bore for his mother, so that even at the age of forty he went to her tomb and wept and prayed for her. In whom did he seek comfort and consolation, when doubting, hesitating, ill at ease, overwhelmed with the crisis of his life, not knowing how to proceed, to whom did he go for relief and advice, whither did he tend his faltering steps—but to the harem of his wife's affection. It was to Khadijah, his wife, that he went in his moments of mental agony, after the vision in which it was alleged that he beheld Gabriel—doubtless a vision which the over-wrought brain of Muhammad created. A proof, however, of his doubt in the matter was his seeking his wife's counsel. Behold, the Muslim Prophet, the founder of the great Arab Empire like the lowliest peasant of the present day in England seeks comfort and advice from his best friend—his wife! Not only so, but he is actually influenced by what she says, is resolved and carries on his mission. This is also another incident, trifling it may be considered by

some, but is all-important—for this very incident helped, if not wholly caused the existence of Islām and the rise of the Arab Dominion. It should also be stated that the first to embrace Islām was a woman and that woman Muhammad's first wife. Witness again his death in the arms of his wife 'Aisha, seeking from her unto the last, relief from the agonies of death. Again his addressing with his dying breath his daughter, playfully encouraging her to bear her loss and saying that she would ere long join him in Paradise. Could not one infer from a careful and impartial study of Muhammad's character the effect it would have upon a sensitive, intelligent and warlike race ?

Is it, therefore, surprising that the early Arabs infused with the spirit of a religion which they understood, influenced by their admiration and respect for a man they loved, and stimulated with the ambition to attain martial glory became animated by a threefold power, which like a mighty whirlwind swept all before it and rolled over the face of the earth and well-nigh conquered the whole world. And with the Arab conquest spread the Arab religion and the Arab tongue. Arabic permeated most of the languages and dialects of Asia and Africa, and in a manner forced its way into some of those of Europe. Learning, science, art and philosophy flourished at their time. The Arabs were the first to give new life to learning. They were the first to introduce the great Greek writers to the notice of the world. They kindled the lamp of learning which illumined the dark pages of history ; and it may be safely assumed that were it not for the Arabs, it would have been long before Europe, the present centre of civilization and progress, would have been irradiated by the bright light of knowledge.

Such were the Arabs and their rise.

So long as they maintained the true spirit of their religion, so long as they maintained that spirit of equality which enabled the lowliest to rise to the highest posts, so long as they curbed the reins of self-indulgence and luxury, they were able to maintain their power and glory.

But soon it was to be otherwise. Having, under Divine Providence, dispersed the dark cloud of ignorance and enveloped the world with the golden veil of knowledge : having shewn to the world the height to which human power and energy can reach, and having indicated the road which leads to the advancement and amelioration of the state of the human race—they missed their footing.

Then came their fall.

The canker-worm of ruin first began to grow at the foundation of the Arab Dominion, with the fall of the Omayyade dynasty, which took place in the year 750. Even then, however, the light of Arab glory was far from being extinguished. The Court of Baghdad under the Abbaside Khalifats (especially during the life of the Barmacides, and the Court of Cordova under the Omeiyade Khalifats surviving through the flight of Abdur-Rahmān, the first Muslim Khalif in Europe—shone with splendour.

The seeds of rivalry and dissension, however, were sown : such dissension as was no longer limited to a few tribes and to a few bold adventurers following in the track of a great enterprise,—but dissension, quarrel and rebellion of great and powerful leaders, supported by large armies and followers. Thus gradually and surely the Arabs began to lose their strength until eventually the last of the Arab Khalifs, Al-Mutawakkil, in Egypt, surrendered his title of ' Prince of the Faithful ' to the Turkish Sultan Selim I. (1517).

What are the main causes of their fall ?

These are many, but they may probably be summed up under the following headings :—

- I. Growing apathy to religious principles.
- II. Abuses of the precepts of the Kurān.
- III. Self-indulgence and sensual excesses.
- IV. Love of gold and luxury.
- V. Too great a confidence in their strength.
- VI. Intoxication of success.

These engendered unhealthy competition, rivalry, jealousy, hatred, dissension and strife. And of this their enemies took advantage, as they, for the same reasons and in the same manner, formerly took advantage of them.

The bond of unity which gave them strength was weakened. They severed religion from the temporal power, and they were doomed.

Religion, is the back-bone of rule and government, especially of an Islamic state. If that be weakened the whole fabric must, in the end, fall to the ground and crumble.

How has the fall of the Arab Dominion affected Islām ?

There can be no doubt that Islām, ever since the fall of the Arabs, has remained stationary, that is to say, it stopped in its career of conquest,¹ but it has lost none of its pristine vigour. The same cry of Allahu Akbar, which sounded above the tumult of war at the time of the earliest Arab, is still heard from the minarets of St. Sophia, and echoes in the vaults of Rameses and Pharaohs—nay even in the busiest streets of London and Liverpool.

¹ It is, however, not correct to say that Islām, ever since the fall of the Arabs, has remained stationary, or that it stopped in its career of conquest. It has made rapid strides in all directions. In Mongolia and China it counts upwards of 70,000,000 millions of votaries. In the Indian Archipelago and Tonquin its votaries are numerous.

At the Church Congress recently held at Yarmouth, Dr. Tisdall said :—" Long before the days of our crusading ancestors the sword of Islām cleft its way into India, and for centuries Mahomedanism strove with Hinduism. Now, a Christian Power rules the many-tongued millions of India, and Islām challenges Christianity. These two are the only missionary religions which in our days contend for allegiance of the human race. Islām is a challenge to Christianity from the very fact that, in India alone, there are far more Muslims (62,458,077, according to the last census) under our rule than there are professing Christians (53,000,000) in the whole British Empire Islām is still spreading. Its progress in Africa is at once rapid and steady, and though in India the yearly increase in the number of its professors is but slow, it is still unchecked Even at the present day, no Muslim in India can become a Christian without enduring great persecution. Cast out by his family, he is fortunate if no tortures are inflicted on him, and if no attempt is made upon his life. Case after case is known when those suspected of an inclination to embrace Christianity in the Panjab have been kidnapped and carried off across the Afghan frontier, never perhaps, to be heard of again."—SARAT CHANDRA DAS.

Some Refinements of Mechanical Science.¹

By PROF. AMBROSE SWASEY.

The division and the measurement of time is to-day, as it has been for ages, among the most important of the subjects affecting the welfare of mankind ; and as time has rolled on and there has been a better understanding of the laws governing the universe, nearer and nearer has been the approach to perfection in the working out of these difficult problems ; but the many limitations surrounding them have always kept their full solution somewhere in the future.

The diurnal revolution of the earth, which gives the solar day, and the revolution of the earth around the sun, the solar year, are the arbitrary divisions of time marked off with the utmost precision by the celestial bodies ; and while the length of the solar day has, from before the Christian era, been fairly well defined, the length of the solar year was but approximately known until within a few hundred years.

The length of the year as counted by the Julian Calendar was too long by eleven minutes and fourteen seconds, and this error amounted to ten full days in the sixteen hundred years from the time the Julian Calendar went into effect until the introduction of the Gregorian calendar.

A few years ago, when visiting the Vatican Observatory, I was particularly interested in the Gregorian tower, which forms a part of the Vatican Library Building. After passing through a number of rooms which are used in connection with the observatory, when near the top of the tower, I was taken into the spacious and beautiful calendar room, the walls of which are covered with paintings of the highest order, executed centuries ago, under the direction of Pope Gregory XIII. In the centre of the room and forming a part of the floor there was a large marble slab, on which was cut a fine line exactly in the true meridian, and upon the line was a special mark which indicated the altitude of the sun at noon of a certain day. On the south wall, near the top of the room, there was a small aperture through which the direct rays of the sun passed at noon, projecting a bright spot on the meridian line.

All of this had been planned and executed by the astronomers in order that they might demonstrate the necessity of reforming the calendar, and when at noon on the 11th of March, 1582, Pope Gregory saw that the altitude of the sun as shown by the beam of light was not for that particular day, but for the day ten days later, he directed that ten days be stricken from the calendar, and that day should be the 21st of March instead of the 11th.

With such precision had the astronomers determined the true length of the year that our present calendar, with its intercalations, will continue on for twenty thousand years with an error not to exceed a single day.

The line on the marble slab and the aperture through the wall of the calendar room were devices simple in the extreme, and in this day of instruments such a method would hardly be considered ; yet they served their purposes admirably, and the placing of that line on the true meridian, with

¹ President's Address, American Society of Mechanical Engineers. Reprinted from the Annual Report of the Smithsonian Institution, issued in 1907.

an accuracy never before attained, was considered one of the greatest scientific achievements of that age.

Since an unknown time the day has been divided into twenty-four hours, and as civilization has advanced, the greater has been the necessity for the utmost precision in the measurement of each hour with its subdivisions.

The sun dial is not only the earliest, but the most interesting of all the numerous arrangements that have been devised for measuring the divisions of the day. Notwithstanding its limitations, it has been a subject which has attracted the brightest minds for ages. Within these later years there has been a renewed interest in this ancient timekeeper, not only in copying the types of dials, which are valuable because of their antiquity, but in working out new forms. Recently a new dial has been invented by which the rays of the sun will indicate the true mean time for each day of the year with an error not to exceed one minute.

The hour glass, which came later, was considered a much more practical method, inasmuch as it could be used either day or night, and because its use was not confined to a particular location; however, as a timekeeper it was not satisfactory, even in those early days.

The clepsydra, or water clock, which is supposed to have been invented by the Greeks, was found to be a much better timekeeper than either the sun dial or hour glass, and it was a great step in advance toward the accurate measurement of time.

These water-clocks are to this day used extensively in the East, more especially in China. Those first used by the Greeks consisted of two water jars so arranged that the water from the upper ran into the lower, and the time of day was determined by measuring the depth of water in the upper jar, and at sunrise each day the water was returned to the upper jar. In the city of Canton there is a water-clock which has been running for eight hundred years, and at the present time it is the standard clock of that city. This clock consists of four water jars, each having a capacity of 8 or 10 gallons. The jars are placed one above the other in the form of a terrace, the three upper ones being provided with a small orifice near the bottom through which the water drops into the jar next below, and so on down from one to the other until the water reaches the lowest or registering jar. In this there is a float, to which is attached an upright, having graduations for the hours and parts of hours; and as the water rises the time can be determined by noting the height of the float in relation to the cross-bar at the top of the jar.

In this improved form of water-clock the variation in the flow of water due to the difference in height is overcome by having a series of jars, the outlet of the upper being so graduated that there is but little variation in the height of water in the second jar, and in the third the height remains practically uniform, thus insuring a constant head for the water which drops into the registering jar. At the beginning of each day the water is taken from below and carried up a flight of steps to the top.

That such an arrangement has some elements favourable to the accurate measurement of time there can be no doubt. It certainly has the element of simplicity, and notwithstanding its long service, the only wear noticeable was confined to the steps leading to the upper jar.

Clocks of the present type, although used as far back as the twelfth century, and possibly earlier, were but fair timekeepers until several centuries later. Those which the astronomers used in their observatories at the end of the fifteenth century were so unreliable that modified forms of the clepsydras of the ancients were used, and as they did not prove to

be satisfactory, most of the observations were made without the use of clocks.

Galileo's beautiful discovery of the isochronism of the pendulum from the swinging chandelier in the cathedral at Pisa was of great value in many respects, but in none more so than in its application to the measurement of time.

Soon after that great discovery the English clockmaker, Graham, invented the mercurial pendulum, by which the variation in its length caused by the difference in temperature was fully compensated; and some years later Harrison, another English clockmaker, invented a compensating pendulum, which consisted of a series of metal bars having different coefficients of expansion—so that two hundred years ago, as it is to-day, the pendulum was the nearest perfect of all the devices that have been employed for governing or controlling the motions of a clock mechanism.

Every part of the clock down to the minutest detail has been the subject of study and improvement; and clocks are made and adjusted with such precision and delicacy that in testing them the question is within how small a fraction of a second will they run. Not content with their marvellous performance when under normal conditions, some of the finest astronomical clocks are surrounded by glass or metal cases, in which a partial vacuum is maintained, and in order that the cases may not be opened or disturbed the winding is done automatically by means of electricity, the frequency of the winding in some cases being as often as once every minute. These clocks are set up in especially constructed rooms or underground vaults, where they are free from jar or vibration, where the temperature and barometric conditions remain practically constant, and where every possible precaution is taken to further minimize the errors of the running rate.

A clock in the observatory at Berlin has run for several months under these favourable conditions with a rate having a mean error of but fifteen one-thousandths of a second per day, and a maximum error of thirty one-thousandths of a second per day.

Another clock, installed at the observatory of Case School of Applied Science, at Cleveland, running under similar conditions, also has a mean error of fifteen one-thousandths of a second per day, with a maximum error for several months of but twenty-two one-thousandths of a second per day.

These are notable examples of the present state of the art of clock-making, and show the wonderful precision with which minute intervals of time can be measured.

From the time of the invention of Peter Hele, in 1477, of the "Nuremberg animated egg," or "pocket clock," which required winding twice a day and varied an hour-and-a-half in the same length of time, the development of the watch has kept pace with the "mother clock" and followed closely to it in time-keeping qualities.

These marvellous little machines, whether made at the homes of the peasants among the hills and mountains of Switzerland, where the skill required for making a single part has been handed down from generation to generation, or made in the great factories of this country, where fully 2,000,000 high-grade movements are turned out annually and where the skill of the workmen has been supplemented by modern methods and machinery, are, notwithstanding the difficulties attending their manufacture, produced so cheaply as to be within the reach of almost everyone.

The larger watch, or ship chronometer, with its escapement so delicately made and adjusted that it must always be kept in the same position, was

greatly improved through the efforts of the British Government in 1714 by offering rewards of ten, fifteen, and twenty thousand pounds to any who should make chronometers that would run so accurately that the longitude of a ship at sea could be determined within 60, 40, and 30 miles. Harrison, the inventor of the compensating pendulum and the compensating balance, which is now used in watches, succeeded in making a chronometer which, after being tested on a long voyage, was found to run so closely that the position of the ship was determined within 18 miles, and he was therefore paid the full award of £20,000. That historic chronometer, which marked a new era in navigation, is now numbered among the treasures of the Greenwich Observatory.

Modern ships are equipped with chronometers so accurate and so reliable and with sextants of such precision that navigators can determine their position in latitude and longitude within a few miles. Therefore, with the increased speed of the powerful ships, carrying hundreds or even thousands of passengers, together with their valuable cargoes, the methods and instruments used in navigation have been so improved as to greatly diminish the dangers in crossing the seas.

The perfection attained in the measurement of time, which is of such great practical value in nearly every sphere of life, would not have been possible were it not for the even greater refinements that have characterized the methods and instruments used by the astronomer in determining the length of the day and of the year, which are the fundamental standards of time.

The division of the circle and the measurement of angles have ever been among the unsolved problems of the astronomer, yet in the instruments used by him circles have formed a most important part.

Long before the telescope was invented, Tycho Brahe, the Danish astronomer, "the founder of modern astronomy," constructed for his observatory instruments of various kinds having graduated circles and arcs of circles. His instruments for the most part were improvements on those used by Arabian astronomers in the eighth and ninth centuries, and these in turn were copied after similar instruments used by the Greeks and Egyptians a thousand years previous; and it is supposed that such instruments were used by the Chinese at an even earlier period, so that graduated circles have come down to us from the far-off ages.

The longer the radius the more accurate the graduations, was the principle upon which the early instruments were made. The Arabians in about the year 1000 built a sextant with a 60-foot radius and a quadrant with a 21-foot radius; but to Tycho Brahe is due the credit of constructing instruments having circles much smaller in diameter and graduated with a greater precision than ever before. It was by the use of such improved instruments of his own making, and by his observations which were made without a telescope or any means of magnification, that he was able to give the positions of a large number of stars within less than one minute of arc from the positions given by modern astronomers.

The graduation of an 8-foot mural circle in 1725 by Graham, of England, for the National Observatory, and of an 8-foot quadrant by Bird, in 1767, were notable steps in advance in the division of the circle and the measurement of angles; but these and similar instruments, although their efficiency was greatly augmented by the use of the telescope, have been supplanted by others more practical.

The first circular dividing engine was made in 1740 by Henry Hindley, of York, England, for cutting the teeth of clock wheels, and it is interesting

to note that in the same year Huntsmann, another clockmaker, of Sheffield, invented the process of making crucible steel, that he might have a metal suitable for the springs of his clocks.

Of the several engines constructed later the one most successful and representing the greatest progress was that made by Ramsden in 1777. This engine, automatic in its movements, was made especially for graduating circles, and because of the great precision with which he divided the circles of the instruments used by the Government, the Board of Longitude awarded him the sum of £615. A further and most potent recognition of the excellence of his work lies in the fact that all subsequent circular dividing engines have followed closely the same general principles of construction embodied in the Ramsden engine.

It is most gratifying to all those who are interested in mechanical progress that the Ramsden engine has been preserved throughout all these years and now stands in the Museum of the Smithsonian Institution at Washington as a monument to the one who made it and as the best example of that time of the art of graduating circles.

Many excellent dividing engines have been made that are quite sufficient in point of accuracy for the work for which they were intended, but the perfection required in the graduation of circles for astronomical instruments is such that it has been found to be one of the most difficult of all mechanical problems to make an engine that will meet such requirements.

In such an engine the chief essential is that the spindle carrying the master plate shall be as nearly round and as closely fitted in its bearings as is possible, for the degree of excellence with which that work is done determines how closely a circle can be divided.

It seems almost incredible that a well-lubricated spindle of 4 inches in diameter at its largest part, and tapering three-quarters of an inch to the foot, can be made so nearly round and so closely fitted in its bearings that a movement of one-thousandth of an inch in or out of its bearings will in one case cause it to turn with difficulty and in the other with perfect freedom; yet this has been found to be within the limits of mechanical refinements.

The greatest accuracy thus far attained in such engines is one second of arc, which arc, with a radius of 3 miles, equals 1 inch, and at 20 inches, which is the radius of the silver ring upon which the graduations on the master plate are made, a line one-thousandth of an inch in width is equal to twelve seconds of arc, or twelve times the accumulated errors of any number of divisions, or twenty times the greatest error of any single division.

In automatically graduating a circle, it has been found to be impracticable to cut more than six lines in a minute, and it requires about thirty-three hours to divide a circle into two-minute spaces. As with the running of the finest clocks, so only can the best results be obtained when the engine is surrounded with every favourable condition possible. Instead of the large circles and sectors used by the ancients, circles of smaller diameter have been made as the methods for graduating have been improved, until those of the more modern instruments are seldom greater than 30 inches, and some of the latest meridian instruments have circles of but 25 inches.

The smaller circles, which can be made and graduated with greater precision than the larger ones, are also less liable to change in form, owing to their weight and the variation in temperature, and with the aid of the reading microscope the results obtained would not be possible with the larger circles.

A 25-inch circle, read with a microscope having a power of 40, would be equivalent to a circle of about 80 feet in diameter; and a single second

of arc, as seen through the microscope, would be equal to 0.0024 of an inch, a quantity easily subdivided.

A most important adjunct to the astronomer's instrumental equipment is the filar micrometer. With it he determines the errors of divisions, the eccentricity of his circle, and measures the angles to within a fraction of a second; and when used at the eye end of the telescope he determines the positions and motions of the stars and the distances and diameters of the planets. In these little instruments, whether of the simple or complex form, the chief requisites are the screw and the cross wires, for upon them the value of the observations and measurements depend.

To make the screw of a micrometer so true that the errors in the threads can not be detected by its own magnifying power is an extremely difficult task. These micrometer screws are often made with 100 threads to the inch, and are provided with graduated drums having 100 divisions, the readings being made in tenths of a division.

The cross wires, which are but common spider lines, because of their fineness and the remarkable qualities they possess, are indispensable in micrometric work.

That the repulsive and even dangerous spider has plenty of enemies among the human family there can be no doubt; yet if the value of the contributions which it has made to the cause of science was generally known, it would surely have a greater number of friends than at present, and most certainly the astronomer will say naught against it, for after the experience of many years he has found that the spider furnishes the only thread which can be successfully used in carrying on his work.

The spider lines mostly used are from one-fifth to one-seventh of a thousandth of an inch in diameter, and in addition to their strength and elasticity, they have the peculiar property of withstanding great changes of temperature, and often when measuring the sun spots, although the heat is so intense as to crack the lenses of the micrometer eyepiece, yet the spider lines are not in the least injured.

The threads of the silkworm, although of great value as a commercial product, are so coarse and rough compared with the silk of the spider that they can not be used in such instruments.

Platinum wires are made sufficiently fine, and make most excellent cross wires for instruments where low magnifying powers are used, yet as the power increases they become rough and imperfect.

Spider lines, although of but a fraction of a thousandth of an inch in diameter, are made up of several thousands of microscopic streams of fluid, which unite and form a single line, and it is because of this that they remain true and round under the highest magnifying power.

An instance of the durability of the spider lines is found at the Allegheny Observatory, where the same set of lines in the micrometer of the transit instrument has been in use since 1859.

The placing of the spider lines in the micrometer is a work of great delicacy, and in some micrometers there are as many as thirty, which form a reticule, with lines two one-thousandths of an inch apart and parallel with each other under the highest magnifying power.

Step by step, from the methods of the Arabian astronomers to the time of Tycho Brahe and on down to the present day, improvements in the instruments and methods for the measurement of angles have been going on, until astronomers can measure double stars with a separation of one second of arc, and within less than one second they can define their positions in the heavens.

In the realm of the measurements of minute linear distances and the perfection of curved and flat surfaces the refinements are even greater than those pertaining to the measurement of time and of angles.

Most important in the linear dividing engine is the screw, and although much had been accomplished in bringing such engines to a high degree of excellence, it was for Professor Rowland to make an engine which has a practically perfect screw; and without doubt it is in all respects the nearest perfect of all the mechanisms that have been employed for ruling lines exactly parallel and equally spaced.

The Rowland engine was made especially for ruling diffraction gratings which are made of speculum metal, and with it a metal surface has been ruled with 160,000 lines, there being about 29,000 to the inch, and as many as 43,000 lines to the inch have been ruled.

The gratings mostly used have from 14,000 to 20,000 lines to the inch, and with such exactness is the cutting tool moved by the screw that the greatest error in the ruling does not exceed one-millionth of an inch.

The production of these gratings, which has enabled the physicist in his study of the spectrum to enter fields of research before unknown, has not only called for the highest degree of perfection ever attained in the spacing of linear distances, but it has also called for a refinement most difficult in the optical surfaces upon which the lines are ruled. To Mr. Brashear was given the problem of producing such surfaces, and notwithstanding the many difficulties encountered in working and refining the speculum metal plates, he has made many hundred plates with surfaces either flat or curved with an error not to exceed one-tenth of a wave length of light, or one four-hundred-thousandth of an inch.

As the established standards of length, which are the yard of Great Britain and the meter of France, are made of metal and liable to destruction or damage, Professor Michelson conceived the idea of determining the lengths of these standards in wave lengths of light, which would be a basis of value unalterable and indestructible.

For the purpose of carrying out these experiments the Interferometer was constructed—an instrument which required the highest order of workmanship and the greatest skill of the optician. Again Mr. Brashear proved equal to the occasion, and made for the instrument a series of refracting plates, the surfaces of which were flat within one-twentieth of a wave length of light, with sides parallel within one second. This was the most difficult work ever attempted in the refinement of optical surfaces.

Professors Michelson and Morley devised a method for using the Interferometer to make the wave length of some definite light an actual and practical standard of length. So satisfactory was the result that Professor Michelson was invited to continue the experiments at the Bureau of Weights and Measures at Sèvres, France, where the standard meter, which is kept in an underground vault and inspected only at long intervals, was used for that important work. The final result of the experiments, which occupied nearly a year, shows that there are 1,553,164.5 wave lengths of red cadmium light in the French standard meter at 15° C. So great is the accuracy of these experiments that they can be repeated within one part in two millions. Should the material standard of length be damaged or destroyed the standard wave length of light will remain unaltered as a basis from which an exact duplicate of the original standard can be made. These two marvellous instruments, the Rowland dividing engine and the Michelson Interferometer, show the possibilities in the perfection of linear divisions and the standards of length.

Luminosity in Plants.¹

By PROF. DR. HANS MOLISCH.

Sixty-two years ago, at the twenty-first meeting of German scientists and physicians at Gratz, over which no less a personage than the famous chemist, J. von Liebig, presided, an Austrian investigator, J. T. Heller, gave an address upon the luminosity of decaying wood, and advanced the idea that the production of light did not come from the decaying wood itself, but from a fungus which penetrated the wood. Not long after this the same investigator carried out a thorough examination of light coming from decaying animals and plants, and discovered that the luminosity in the flesh of dead marine animals and various decaying plant substances was not a purely chemical but a biological process, uniformly produced by a certain plant, a fungus. That is to say, it is not the flesh of a fish or the wood that is luminous, but a fungus living upon these and penetrating them in proportion to their decay. It may be noted that priority for this discovery has been accorded, though unjustly, to the gifted physiologist, E. Pfüger, because Heller's investigations dropped entirely out of sight, and were only recently discovered by me. The priority unquestionably belongs to Heller.

By understanding that the problem is a biological one, an important basis has been gained for further investigations. As, furthermore, R. Koch has enriched scientific knowledge by his bacteriological technique and the method of pure cultures of bacteria, the cultivation of various light-producing bacteria and recently also of luminous fungi has been successfully undertaken. We are now in condition to approach the subject of distinguishing between various species, of investigating the conditions for luminosity, the nature of the light, and the problem of light development. If we exclude light development in the *Peridineæ*, which are sometimes referred to the animal and sometimes to the vegetable kingdom, and which play an important part in the striking spectacle of marine phosphorescence; and if we ignore the so-called glimmer of flowers, first observed by the daughter of Linnæus, which is attributable to an entirely different cause, probably a purely physical one, and most likely to the appearance of St. Elmo's fire, all light-producing plants may be said to belong to the Fungi; that is, to the Bacteria and the mycelial Fungi.

In order to avoid misunderstanding it may be said that in speaking of light-producing plants I refer invariably to those plants which of themselves produce the light, their own and not reflected light, to which latter phenomenon are to be referred the wonderful iridescence of many sea algæ, the remarkable emerald green gleam of the luminous moss *Schistostega osmundacea*, and the reflection, like liquid gold, of the Flagellate, *Chromophyton rosanoffii*. There are, in round numbers, thirty different kinds of bacteria and about half as many other fungi which have the power of luminosity. If we compare this to the combined number of existing plant

¹ Annual Report of the Smithsonian Institution, 1905.

species they doubtless appear as a very small proportion. Nevertheless, we are frequently surrounded with luminous objects in nature and even in the household, because certain ones of these light-producing fungi are among the most common of all plants. Of these I will give a couple of examples.

Until recently luminosity in butcher's meat was considered to be a spectacle of rare occurrence, a curiosity the cause of which was unknown and the conditions producing it infrequent. When I undertook an investigation of the matter I lacked proper material; and although I communicated with various people and institutions where luminous meat would be most likely to be found, not a single specimen was supplied to me for fully two years. I was about ready to abandon the undertaking when the idea came to me to examine meat supplied to me for household use, and to my astonishment it appeared that such meat, kept for from one to three days in a cool place, began in many instances to spontaneously produce light. In following up the matter I found that the luminosity much more frequently occurred if ordinary butcher's meat was so immersed in a 3 per cent. solution of salt that about one-half of it remained out of the liquid. Experiments with meat, carried on for three months, afforded not less than 87 per cent. of cases of luminosity; thus, experiments with beef afforded 89 per cent., experiments with horseflesh 65 per cent. By means of pure cultures it was demonstrated that the cause of the luminosity was invariably the same intensely luminous bacterium, namely, *Bacterium phosphoreum* (Cohn) Molisch. As I have carried on similar researches for a number of years, not only in the city of Prague but in other cities as well and with essentially the same results, it can be stated that the spontaneous luminosity of meat is in fact a quite common occurrence.

The cause of this light development, *Bacterium phosphoreum*, is one of the most widely distributed of the bacteria. It is found on meat in refrigerators, in slaughterhouses, in butcher shops; in fact, it finds an entrance into our kitchens where meat is usually prepared. For in no other way can we explain the fact that so many specimens of meat display the power of spontaneous luminosity. I have of late come upon another form of light production, which, although of common occurrence, is practically unknown. I refer to light from decaying leaves. During walks taken at night in the Tropics, especially in Java, I frequently found the dead leaves of *Bambusa*, *Nephelium*, *Aglaia*, and other plants to be luminous in the darkness. On returning to Europe with the experiences gathered in the Tropics, I looked into the same subject on native ground and found that luminous dead leaves of the oak and beech are quite common in middle Europe. The leaves must be in a somewhat moist condition and to some extent decayed. Such leaves, especially, as display on account of decay a somewhat yellowish or ashen colour or show spots of yellow and brown, give a particularly beautiful light. The luminosity is usually local, rarely over the entire surface—a white, soft, steady light. Here also the luminous cause is not the leaf substance, but the living fungus within it.

According to my own observations, no inconsiderable percentage of fallen oak and beech leaves are luminous in the summer time; and on all sides the floor of the forest is illuminated with light, feeble indeed, but easily detected. Unfortunately I have not as yet been able to isolate the fungus which produces this light of decaying foliage. Still I have employed with advantage the methods of pure cultures with the fungus, producing light in wood, and thereby have recognized in *Agaricus melleus* and *Mycelium x* the two fungi which with us most frequently cause this

luminosity. At the same time it has become evident that certain cryptogams generally considered as luminous fungi, such as *Xylaria Hypoxylon*, must be stricken out of the list of the Photomycetes, and to this may also be added *Trametes pini*.

In *Bacterium phosphoreum* (Cohn), Molisch and Mycelium "x" (necessarily so called at present, as despite years of cultivation it has not yet fruited), are secured two remarkably valuable experimental adjuncts for accurately studying light development in a definite way, because of their relatively powerful intensity of light and the unusually long period that they are luminous.

Luminosity and the growth of luminous bacteria are dependent, among other things, upon certain salts and organic substances. Table salt plays a prominent part in this respect, seeing that as a rule these bacteria are marine, and for this reason 3 per cent. of table salt is generally added to the culture medium. The salt does not serve as food, but rather performs an osmotic function, by rendering the culture medium more or less isosmotic to the cell contents of the bacteria. Other salts can in the same way replace table salt, as potassium chloride, magnesium chloride, calcium chloride, potassium nitrate, potassium iodide, and potassium sulphate. In fact, I have the impression that potassium nitrate is more active in causing luminosity than the chlorides, such as sodium and potassium chlorides.

We are indebted to Beijerinck for some exhaustive and valuable investigations upon the relations existing between nutriment, luminosity, and growth. The method of his investigations is essentially the spreading upon thin glass plates of gelatine containing photobacteria and supplied with an excess of nutriment. When it is spread out as a thin film the bacterial field quickly becomes luminous. As soon, however, as the excess of nutriment is consumed, the light ceases. If now we add to the gelatine a substance, the influence of which on luminosity and growth we desire to test, it dissolves and is disseminated in a circle in all directions. If this added substance is a nutritive one for luminosity, we see, frequently in a few seconds, the area that was affected growing luminous. By this method bacterial fields exhibit reactions of astounding delicacy. Certain materials, pre-eminently lebulose and glucosae, cause the field to grow luminous in a few seconds. In this respect the photobacteria react with so minute a quantity of material that Beijerinck saw in these reactions an analogy to the Bunsen-flame reaction. In one sense this bacterial reaction is superior, in that it continues longer.

The luminous bacteria act in various ways with materials containing carbon and nitrogen. One class, called by Beijerinck Pepton-bacteria, finds the necessities for growth and light development supplied in pepton or some albuminous material; the other class, called by him Pepton-carbon-bacteria, requires at the same time the presence of material containing pepton to supply the necessary oxygen and also carbonaceous matter, which is not necessarily free from nitrogen.

If the nutritive material is well adapted to both growth and a multiplication of bacteria, it will cause not only luminous fields, but fields of growth called "auxanogrammes," characterized by the innumerable colonies of bacteria that develop far more rapidly in the field where the material has been diffused than outside of it. Beijerinck calls such nutritive material "plastic." Luminous substances are uniformly plastic though the reverse of this is not necessarily true. From this the important fact follows that light development by the luminous bacteria is not necessarily connected with either growth or respiration.

Beijerinck has with great ability made use of the luminous bacteria for detecting the most minute quantity of an enzyme.¹

The following example will illustrate this: He takes advantage of the fact that *Photobacterium phosphorescens* displays light with maltose, while *Photobacterium Pflügeri* does not. He uses a thoroughly cooked mixture of sea water containing 8 per cent. of gelatin, 1 per cent. of pepton, and one-fourth per cent. of potato starch. To a portion of this he adds an excess of *Photobacterium phosphorescens*, and to the rest the same of *Photobacterium Pflügeri*, and prepares from these two similar gelatin plates equally illuminated. In both, the starch remains unchanged, seeing that these bacteria are unable to secrete the necessary enzyme, diastase. If now some diastase preparation (such as maltose, pancreas-diastase, or ptyalin) is added to these plates, it distributes itself in all directions, transforms the starch into grape sugar, and upon the field of the *Photobacterium phosphorescens* there instantly appear strong, shining flecks, which later spread over the whole field of growth, while on the field of *Photobacterium Pflügeri* nothing of this kind is to be seen. In this way *Photobacterium phosphorescens* can be made to demonstrate, through its luminosity, the presence of maltose, that is to say, of a diastase.

For an understanding of the nature of light development in plants it is above all necessary to state that the luminosity is absolutely dependent upon free oxygen. The light is conditioned on oxidation. The finest investigations of the dependence of luminosity upon oxygen are the brilliant experiments of Beijerinck. According to his researches the luminous bacteria afford the most sensitive tests for oxygen that we possess. Thus the extremely minute quantity of oxygen which unicellular algæ give off in sunlight by their assimilation of carbonic-acid gas, is sufficient to instantly render these bacteria luminous. If we introduce these green cells into a glass tube filled with bouillon containing luminous bacteria, the light quickly disappears because the bacteria speedily consumes the oxygen contained in the liquid. If, now, such a tube is kept in a dark room and then the light of a match is allowed to fall upon it for a single second, the entire mass grows luminous. The green cells give off oxygen, and this fabulously minute quantity of the free gas is sufficient to cause luminosity in the bacteria. It is a remarkable example of the fact that physiological methods not only compete well with the best physical and chemical methods, but plainly surpass them, and that a vital function itself can be used as a methodical factor of science of the highest value.

A demonstration of the importance of oxygen to luminosity can be made before a large audience in the following way: A glass tube closed at one end, having a diameter of about 8 mm. and a length of 1 to 1½ m. is filled to within $\frac{1}{2}$ to 1 cm. of the top with strongly luminous bouillon (bouillon mixed with *Bacterium phosphorium* or *Pseudomonas lucifera*). Such a tube, at the expiration of a quarter of an hour, loses its light as the bacteria exhaust the oxygen, except the mere upper surface of the liquid in contact with the air. If, now, the tube is closed with the thumb and inverted, a bubble of air will ascend through the bouillon, making its entire course luminous and appearing in the darkness like a slowly ascending sky-rocket. In a quarter of an hour or less the luminosity again disappears, and the experiment can be repeated.

¹ An enzyme is a product of certain plant or animal cells by means of which food material of a certain kind, such as starch, is transformed into another food material, such as grape sugar. Diastase is an example of an enzyme.—Translator.

Botanists, as a rule, teach that a direct relationship exists in the fungi between the development of light and respiration. Thus Sachs speaks of phosphorescence as the necessary consequence of respiration, of phosphorescence *by means of respiration*. But F. Ludwig has already demonstrated that luminous bacteria can be cultivated, and therefore made to grow and breathe without any luminosity; and we can, therefore, easily see how that at increasing temperatures the intensity of respiration may steadily increase, but the intensity of luminosity to only a limited degree. The relation existing between light development and oxygen is analogous to that between colour development and oxygen. Most of the colour-producing bacteria show colour only in the presence of oxygen, as can be seen in gelatin cultures into which an infected needle has been introduced. When the free gas can reach the bacteria, the colour appears, but deeper in the gelatin the bacteria, cut off from oxygen, develop without colour. Colour-production and light-production are therefore oxidation phenomena. * * *

During recent times quite a number of investigators have been incidentally or directly engaged in throwing light upon the nature of luminosity—E. Pflüger, Radziszewski, Dubois, F. Ludwig, Katz, Tollhausen, Lehmann, Beijerinck, McKenney, and Nadson. However, their interpretations differ from each other considerably. The further our knowledge of the subject is extended the more probable appears the idea that within the cell is a hypothetical substance, "photogen," which has the power of producing light in the presence of free oxygen. This idea receives substantial support from the fact brought out by Radziszewski that a long list of organic substances, such as aldehyde materials, ethereal oils, carbonic-acid, water, fatty oils, and certain of the alcohols, have the power of luminosity when brought into alkaline reaction with active oxygen. As the light produced by these substances has an external and spectroscopic likeness to that produced by living organisms, and as some of the substances in the list of Radziszewski, which are capable of luminosity, exist also in living cells (I mention lecithin, fats, cholesterine, ethereal oils, and grape sugar) that investigator has come to the conclusion that light development in living organisms can be explained as an oxidation of these same substances. Radziszewski looks upon the problem, therefore, as solved. We have, however, as yet hardly gotten that far. The question of whether Radziszewski is in the right could be definitely settled if we could extract from the living cell a photogen material which would show luminosity outside of the cell. But up to the present time the attempt has not been successful. Furthermore, according to Pfeffer, no active light-causing oxygen exists in the living plant cell, which does not square with the theory on which Radziszewski's explanation rests, inasmuch as his light-producing substance is luminous only when in contact with active oxygen. Nevertheless, I look upon the photogen theory as the most plausible, though we at present have no knowledge as to the nature of photogen. Possibly it is a material in no sense similar to the luminous substances previously mentioned; perhaps something capable of giving light without active oxygen.

There are certain facts which appear to me to directly support the idea of a photogen. Thus, certain animal organisms give out a non-cellular luminous secretion, and certain cells, together with their contents, are capable of producing light when no longer living. Mention can be made of *Pholas*, certain of the insects, myriapods, and many of the worms. A fact of significance and too little noted is that certain tissues and cells have the power of producing light in a lifeless condition. Thus, manuscript

written with the luminous material obtained from *Luciola italica* gives off light when it is dampened. The light organs of *Lampyrus noctiluca* lose their luminosity when thoroughly dried and kept in a vacuum. But, according to Bongardt, if after a year's time they are taken out and moistened with a drop of distilled water, the light reappears. If filter paper is impregnated with the secretions of certain myriapods, it can, after two months' time, be made luminous by moistening. It is impossible, in such instances, to talk longer about "living cells" or "living cell contents," for it is impossible to describe as living the luminous material from an insect that has been dried and kept for a year in a vacuum. In such instances we are no longer dealing with a vital but with a purely chemical process; we are dealing with a substance which produces light in the presence of water and free oxygen.

In the case of luminous plants no such thing as a luminous excretion exists, though such is erroneously stated to be the case, for the light exists only within the cell. In other words, it has never been seen outside of the living plant cell, and to that extent luminosity in plants must be spoken of as a genuine *vital* luminosity. But in the same way not long ago alcoholic fermentation was held to be inseparably connected with living yeast cells, while to-day, thanks to the brilliant biochemical discoveries of Buchner, we know that it is due to a certain material—the ferment zymase—which can of itself, although a lifeless substance, bring about the fermentation. We can suppose the same to be true for photogen. Although the isolation of such a luminous material has not as yet been accomplished, the failure is probably due to the material being present in such very minute quantity, to its extreme instability, and its destruction through the death of the cell. What photogen really is, and whether the giving of light represents a process of fermentation—these questions can not at present be answered. The future investigator must unearth these facts. To directly or indirectly prove the existence of photogen; to, if possible, isolate it from the cell, and then render it luminous—such efforts, in the light of other biochemical facts, appear to me most tempting and by no means unpromising.

Whoever has observed the swarms of fireflies flying through the darkness of the night like wandering stars, or the intense light of pure cultures of bacteria and the higher fungi, must involuntarily have been impressed by the peculiarity of these "living" lights. And therefore it is easy to see that at a time when the science of physics has surprised us with unexpected revelations, appearing at first like marvels, that we should, with redoubled activity, turn our attention to the nature of this light coming forth from life, and seek to discover its physical, chemical, and physiological activities.

I wish, first of all, to call attention to a noteworthy difference between the character of this light in the animals and in the plants. If we leave out of account the *Peridinæ* and confine ourselves to the plants alone, we see they are always steadily luminous. The bacteria and higher fungi give forth light for days, weeks, months—indeed, under some circumstances, as when supplied with abundant nourishment, for years, without cessation, day and night, while the animals, with few exceptions, shine only a short time, a few seconds or minutes, and mainly in response to some external irritation; so that the light gives the impression of a flash or spark. The light of the fungi is of a white, green, or blue character, and, contrary to earlier statements, never undulates like the light of phosphorus; never is inconstant or glimmering, but is in all cases quiet, steady, and constant whether viewed with the naked eye or through the microscope. As a rule,

its intensity appears to be low, and yet there are bacteria so intensely luminous that they can be seen on a bright day in the corner of a room without the eyes being accustomed to the darkness. A remarkable object in this respect is *Bacterium phosphoreum* (Cohn) Molisch, the luminous bacteria of butcher's meat, and, to an even greater extent, *Pseudomonas lucifera*, Molisch, a photobacterium which two years ago I discovered in marine fish, the light intensity of which surpasses that of any luminous bacteria heretofore known.

To R. Dubois is due the credit of having first attempted to utilise bacterial light in the form of a lamp, and I have renewed Dubois's attempt with the two already mentioned intensely luminous bacteria, and have constructed a bacterial lamp on the following plan: In a Florence flask, having a capacity of from 1 to 2 liters, is put from 200 to 400 cubic centimeters of salt-peptone-gelatin. It is then stopped with cotton wool and sterilized. When cool, but before the gelatin has quite solidified, it is infected with a culture, fresh and luminous, of *Bacterium phosphoreum* or *Pseudomonas lucifera*, a platinum needle being used. The flask is held horizontally and slowly rotated, so that the gelatin forms a coating on the entire inner surface of the flask and then hardens. After being kept for one or two days in a cool room, the entire inner surface of the flask is covered with colonies of bacteria, so that it gleams with an exquisitely beautiful bluish-green light, and presents with its soft, steady brilliancy a splendid appearance. I have lately found that the luminous power of such a lamp can be considerably augmented by applying the infection to the gelatin in parallel lines about 1 centimeter apart, running from the bottom to the neck of the flask, and adding to the gelatin 1 to 2 per cent. of peptone and about one-half per cent. of glycerine. Such a lamp will continue luminous in a cool room for about fourteen days, and when the eye is accustomed to the darkness, will give light enough to see the face of a watch, the scale of a thermometer, or to read course print. Such a flask is visible on a dark night at a distance of 64 paces, and could in an emergency be utilized as a night lamp. Inasmuch as dead luminous flounders are successfully used as bait by fishermen on account of their light, a lamp of this kind could be made to serve as a valuable lure in catching fish.

My investigations warrant me in stating that in the future it will probably be possible, by means of exact formulas of nutriment and by selective breeding, to so increase the intensity of this exceedingly cheap source of light, so free also from heat rays, that on account of its cheapness, its long and uninterrupted luminosity, its freedom from danger, and its lack of heat, it can be turned to practical account in powder magazines, in mines that are not too warm, and in other places.

In connection with the investigations of F. Ludwig and Forster, I may state, in regard to the luminous bacteria and mycelial fungi, that their light spectra are continuous, without dark lines, and, as a rule, simply luminous spectra—that is to say, on account of their low intensity they are colourless; that the spectrum of the already named bacteria shows a more decided trend toward the violet end of the spectrum than that of the higher fungi; and that in regard to the light of fungi (and this is also true for insects) the green rays dominate the weaker yellow and blue rays. I have actually succeeded in distinguishing colours through the spectroscope in the intense light of the previously mentioned *Pseudomonas lucifera*, Molisch—green, blue and violet. This is the first established case where colours have been seen through the spectrum in the light of a plant.

It is possible to state, on account of the spectroscopic composition

of fungous light, that it may be made to act on photographic plates. In fact, the researches of various investigators—as Von Haren, Norman, Forster, Barnard, and especially R. Dubois—have taught us that photographs can be taken by bacterial light. If one uses intensely luminous bacteria, such as are at my disposal, it is possible to make photographs of bacteria colonies by their own light by an exposure of five minutes, and if bacteria lamps are employed, to make good pictures of various objects, such as busts, thermometers, and printed matter. In the last instance, however, to secure sharp pictures, the time of exposure must be several hours. On the other hand, if merely an impression upon the plate is desired, a single second of time is sufficient to secure an image of a luminous-streak culture. All pictures so far produced have been the result of light from colonies or mass cultures. But it appears to me not at all improbable, in view of the practically unlimited sensitiveness of photographic plates, that hereafter it may be possible to photograph a single bacterium cell by means of its own light, in the same way as we have succeeded in rendering visible, by means of the photographic plate, stars in the heavens which are invisible to the naked eye.

The discovery of Röntgen-Becquerel rays and of the emanations proceeding from radioactive elements make opportune the thought that rays of particular quality may also exist in bacterial light. Still the assertion made by R. Dubois that bacterial light has the power of penetrating opaque bodies, like wood and cardboard, is based upon an illusion brought about through the direct action of the wood or paper material on the salts of silver. On the same basis, I am able to explain the remarkable, and from the standpoint of physics utterly puzzling, statements of the Japanese investigator, Muraoka, in regard to the light of the firefly. Fungous light—and the same is true of the light of the firefly—acts upon the salts of silver like ordinary daylight, and is incapable of penetrating opaque objects.

It seems to me to be not without interest that bacterial light also brings about physiological results in plants. Heliotropic sensitiveness is, according to Wiesner, of remarkable intensity, especially in the case of the etiolated seedlings of certain plants. Such plants can discriminate better than the human eye between the most minute differences in light intensity, and may therefore with justice be considered as excellent physiological photometers. This extraordinary light sensitiveness induced me to test experimentally the heliotropic power of bacterial light. In fact this light can bring about positive heliotropism in various seedlings, such as the lentil, the pea, and the vetch; and in fungi, as *Phycomyces* and *Xylaria Hypoxylon*. We have here a striking spectacle, that of one plant influencing another in its movements; the bacteria, by their production of radiant energy in the form of light, compelling the stem of a plant to extend its growth almost directly toward the source of illumination. Bacterial light does not, however, show itself capable of causing the production of chlorophyll, probably because the light is not sufficiently intense for this process.

We come now to the question whether so striking a phenomenon as this development of light in plants gives indication of being of any practical benefit to them. Zoologists seem to agree that light among the animals is of great importance. For when we consider the instantaneous and explosive generation of light, the sudden expulsion of a luminous secretion and the wonderful construction of a light-producing apparatus in animals inhabiting the darkest depths of the sea, we can have no doubt that such constructions are of service to the organisms, and that a definite use is

served by this light-development in the case of many zoological forms. Thus these creatures may, by means of their light, either allure or frighten, or may illuminate their surroundings in order to more easily and successfully capture their prey.

The question in the case of plants is far more difficult to answer. The idea has been advanced that the light capacity of the bacteria may be a means of their distribution. The light of those bacteria occurring in decaying sea animals is said to attract certain animals along the seashore to feed upon these, and by scattering the bacteria, to aid in their dissemination. I agree with Beijerinck that, as sea currents, waves, and the sand along the shore bring about the dissemination of these bacteria in the most admirable manner, the before-mentioned opinion is untenable.

There may be some doubt in the case of luminous mushrooms; in fact, a well-known biologist, Von Kerner, has expressed the opinion that the light of the mushroom points out the way for fungus gnats and fungus beetles, which lay their eggs in the mycelium and spore-bearing tissues of these Hymenomycetes; so that these creatures are in this way of service to the fungus by transporting its spores. At first sight this theory seems to have much in its support, but on closer examination we find there is not a little against it. Thus, in the case of the mushroom *Agaricus melleus*, it is difficult to understand why the gills, which bear the spores and are easily penetrated by insects, are not luminous, while the mycelium, growing under tree bark or in the wood, is luminous. The luminous fungus threads growing in phosphorescent wood produce, as a rule, no fruit-bearing organs whatever. If the idea of this light of the mycelium were to allure insects or maggots, the result would be simply the destruction of the fungus, for by attracting these animals it would not be disseminated, but fed upon, and thereby destroyed, so that its light would be its ruin. Or if the light of the plant were to serve the purpose of enticing animal forms at night, it is not easy to understand why the plant is not luminous merely at night instead of uninterruptedly by day and by night—that is, at times when the light is wholly imperceptible to these animals. In the case of plants the question is a radically different one from that in the case of animals, and under these circumstances it seems to me better to forego speculations and simply to rest on the fact that at the present time we are unable to give any plausible teleological explanation of luminosity in the Fungi; perhaps, indeed probably, because it is nothing more than an inevitable consequence of the transforming of substances in the luminous Fungi.

If, in conclusion, we glance at our problem from the standpoint of dynamics, it is seen that, in company with various forms of energy in the plant, as heat, electricity, and chemical energy, radiant energy can also be produced in the form of light. A wondrous factor! The green cell in its minute microscopic laboratory, the chlorophyl grain, lays hold upon the energy emanating from the sun and transforms the living force of the light ray into chemical energy. Thereby is produced from the carbonic-acid gas of the atmosphere, with liberation of oxygen, organic matter—a storehouse of potential force. This organic matter enters as food into luminous animals and luminous plants, and there, by transmutation, produces once more heat and light.

Truly a cycle from light to light in the plant! In fact, the light of the living organism is governed by the energy of the sun. When the light of the glowworm, hidden in the grass, pours forth, directing by its lantern the way for its amorous mate; when the *Noctiluca* or *Peridineeæ*, disturbed by the ship's keel or whipped by the waves, suddenly gleam forth; when

the sea crabs on the floor of the ocean illuminate the darkness with their organs of light, or when luminous bacteria in decaying flesh or shining mushrooms in old forests flood their surroundings with magic twilight, this light of the organism is fundamentally nothing other than the radiating energy of the sun caught up by the plant and transformed into light. It is the newborn sunlight of the plant.



Gold in Science and in Industry.

By PROF. G. T. BEILBY, F.R.S.

I.

From the early beginnings of civilization gold has been highly prized and eagerly sought after. Human life has been freely sacrificed in its acquirement from natural sources, as well as in its forcible seizure from those who already possessed it. The "Age of Gold" was not necessarily the "Golden Age," for the noble metal in its unique and barbaric splendour has symbolized much that has been unworthy in national and individual aims and ideals.

We have accustomed ourselves to think of the present as the Age of Iron, as indeed it is, for we see in the dull, grey metal the plastic medium out of which the engineer has modelled the machines and structures which play so large a part in the active life of to-day. Had iron not been at once plentiful and cheap, had it not brought into the hands of the engineer and artificer, its marvellous qualities of hardness and softness, of rigidity and toughness, and to the electrician its mysterious and unique, magnetic qualities, it is not difficult to conceive that man's control over the forces of nature might have been delayed for centuries, or perhaps for ages. For iron has been man's chief material instrument in the conquest of nature; without it the energy alike of waterfall and of the coalfield would have remained uncontrolled and unused. In this conquest of the resources of nature for the service of man are we not entitled to say that the intellectual, and social gains have equalled, if they have not exceeded, in value the purely material gains; and may we not then regard iron as the symbol of a beneficent conquest of nature?

With the advent of the industrial age gold was destined to take a new place in the world's history as the great medium of exchange, the great promoter of industry and commerce. While individual gain still remained the propelling power towards its discovery and acquisition, every fresh discovery led directly or indirectly to the freer interchange of the products of industry, and thus reacted favourably on the industrial and social conditions of the time.

So long as the chief supplies of gold were obtained from alluvial deposits by the simple process of washing, the winning of gold almost necessarily continued to be pursued by individuals, or by small groups of workers, who were mainly attracted by the highly speculative nature of the occupation. These workers endured the greatest hardships and ran the most serious personal risks, drawn on from day to day by the hope that some special stroke of good fortune would be theirs. This conditional prevailed also in fields in which the reef gold occurred near the surface, where it was easily accessible, without costly mining appliances, and where the precious metal was loosely associated with a weathered matrix. These free-milling ores could be readily handled by crushing and amalgamation

with mercury, so that here also no elaborate organization and no great expenditure of capital were necessary. A third stage was reached when the more easily worked deposits above the waterline had been worked out. Not only were more costly appliances and more elaborately organized efforts required to bring the ore to the surface, but the ore when obtained contained less of its gold in the easily recovered, and more in the refractory or combined form. The problem of recovery had now to be attacked by improved mechanical and chemical methods. The sulphides or tellurides with which the gold was associated or combined had to be reduced to a state of minute sub-division by more perfect stamping or grinding, and elaborate precautions were necessary to insure metallic contact between the particles of gold and the solvent mercury. In many cases the amalgamation process failed to extract more than a very moderate proportion of the gold, and the quartz sand or "tailings" which still contained the remainder found its way into creeks and rivers or remained in heaps on the ground around the batteries. In neighbourhoods where fuel was available a preliminary roasting of the ore was resorted to, to oxidize or volatilize the baser metals and set free the gold; or the sulphides, tellurides, etc., were concentrated by washing, and the concentrates were taken to smelting or chlorinating works in some favorable situation where the more elaborate metallurgical methods could be economically applied. Many efforts were also made to apply the solvent action of chlorine directly to the unconcentrated, unroasted ores; but unfortunately chlorine is an excellent solvent for other substances besides gold, and in practice it was found that its solvent energy was mainly exercised on the base metals and metalloids and on the materials of which the apparatus itself was constructed.

This, to the best of my knowledge, is a correct, if rather sketchy, description of the state of matters in 1889 when the use of a dilute solution of cyanide of potassium was first seriously proposed for the extraction of gold from its ores. Those of us who can recall the time will remember that the proposal was far from favorably regarded from a chemical point of view. The cost of the reagent, its extremely poisonous nature, the instability of its solutions, its slow action—such were the difficulties that naturally presented themselves to our minds. And, even granting that these difficulties might be overcome, there still remained the serious problem of how to recover the gold in metallic form from the extremely dilute solutions of the cyanide of gold and potassium. How each and all of these difficulties have been swept aside, how within little more than a decade this method of gold extraction has spread over the gold-producing countries of the world, now absorbing and now replacing the older processes, but ever carrying all before it. In 1889 the world's consumption of cyanide of potassium did not exceed 50 tons per annum. This was produced by melting ferrocyanide with carbonate of potassium, the clear fused cyanide so obtained being decanted from the carbide of iron which had separated. The resulting salt was a mixture of cyanide, cyanate, and carbonate, which was sometimes called cyanide of potassium for the hardly sufficient reason that it contained 30 per cent. of that salt. When the demand for gold extraction arose, it was at first entirely met by this process, the requisite ferrocyanide being by the old fusion process from the nitrogen of horns, leather, etc. In 1891 the first successful process for the synthetic production of cyanide without the intervention of ferrocyanide was perfected, and the increasing demand from the goldmines was largely met by its use. At present the entire consumption of cyanide is

not much short of 10,000 tons a year, of which the Transvaal goldfield consumes about one-third. Large cyanide works exist in Great Britain, Germany, France, and America, so that a steady and sure supply of the reagent has been amply provided. In 1894 the price of cyanide in the Transvaal was two shillings per pound; to-day it is one-third of that, or eight pence. During the prevalence of the high prices of earlier years the manufacture was a highly speculative one, and new processes appeared and disappeared with surprising suddenness, the disappearance being generally marked by the simultaneous vanishing of larger works scientifically organized and supervised, and, both industrially and commercially, the speculative element has been eliminated.

Chemistry has so often been called to the part of the humble and unrecognized handmaiden to the industrial arts that we may perhaps be pardoned if in this case we call public attention to our Cinderella as she shines in her rightful position as the genius of industrial initiation and direction.

It appears, then, that while gold still maintains its position of influence in the affairs of men, the nature of that influence has undergone an important change. Not only has its widespread use as the chief medium of exchange exercised far-reaching effects on the commerce of the world, but the vastly increased demand for this purpose has in its turn altered the methods of production. These methods have become more highly organized and scientific, and gold production is now fairly established as a progressive industry, in which scope is found for the best chemical and engineering skill and talent.

The experience of more highly evolved industries in the older countries has shown that the truly scientific organization of industry includes in its scope a full and just consideration for the social and intellectual needs of its workers from highest to lowest. It augurs well, therefore, for the future of the gold industry, from the humane and social points of view, that its control should be more and more under the influence of men of scientific spirit and intellectual culture, who, may feel assured, will not forget the best traditions of their class.

The application of science to industry requires on the part of the pioneers and organizers keen and persistent concentration on certain well-defined aims. Any wavering in these aims or any relaxation of this concentration may lead to failure or to only a qualified success. This necessary but narrow concentration may be a danger to the intellectual development of the worker, who may thereby readily fall into a groove and so may become even less efficient in his own particular work. It certainly requires some mental strength to hold fast to the well-defined, practical aim while allowing to the attention occasional intervals of liberty to browse over the wide and pleasant fields of science. But I am certain that the acquirement of this double power is well worth an effort. The mental stimulus, as well as the new experiences garnered during the excursion, will sooner or later react favorably on the practical problems, while the earnest wrestling with these problems may develop powers and intuitions which will lend their own charm to the wider problems of science.¹

¹ The above extracts have been taken from the Presidential Address published in the "Chemical News," London, Vol. 92. See also Smithsonian Institution Report, 1905-1906.

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The Hero-Gods of the R̥gveda.

III. MĀTARIṢVĀ. A 116⁵⁰

Opinions differ both as regards the derivation and the meaning of the word *Mātariṣvā*. *Sāyana* derives it from मातरि, in the atmosphere, and श्व, to breathe, and explains it as air or wind. This may be the true etymology, but the word may mean lightning. For the root श्व also means to hiss, pant, snort etc., and if it be taken in this sense the word is more likely to mean lightning than air. The word may also be derived from मातरि and श्व a form of the root श्रू or स्वा, to grow or swell. The word may then also mean lightning. This seems to be the derivation, and the meaning of the word according to *R̥ik* III. 29. 11. to which I will come later on. That in a number of *riks*, *Mātariṣvā* means *Agni* especially in the form of lightning, all scholars agree. It is also admitted that in a few *riks*, *Mātariṣvā* is a *R̥iṣi*, performing sacrifices and offering *soma* libations to *Indra*. With regard to one important point, however, they disagree, namely, who that *Mātariṣvā* was, who as a messenger of king *Vivasvān* brought fire from heaven. As regards this question, the Indian opinion from the time of the *Atharva Veda* is unanimous that the *Mātariṣvā* who brought fire from heaven was air. Among the western scholars there are some who side with the Indian authorities. Max Müller is one of them, as the following extract from his Gifford Lectures on "Physical Religion" will shew:—

"This *Mātariṣvā*, to whom *Agni* appeared as lightning, is frequently mentioned, and we here reach a stratum of mythology, which crops up again and again in the *Veda*, but which hitherto has resisted all analysis. We do not know what is meant by *Mātariṣvā*, the name admits of no satisfactory etymology, and seems to date from a remoter period of language. We may gather, however, from the passages in which *Mātariṣvā* occurs, that he was meant for the air or for the wind that seemed to carry the fire of lightning from the heaven through the air to the earth. I quote again from *Rv.* I. 143, 2 :

Sah gāyamānah paramē vyomani āvīh agni abhavat Matarisvane. 'Agni, born in the highest heaven, appeared to *Mātariṣvan*.'

I believe the difficulty of Max Müller was chiefly on account of his too much leaning to the mythological explanation of every difficulty in the *R̥gveda*, and of his not taking into sufficient consideration all the passages in which the word *Mātariṣvā* occurs. Roth and Bohtlingk on the other hand thought that the word was nowhere in the *R̥gveda* used in the sense of air or wind. Muir came to the same conclusion. These scholars as well as Oldenberg took *Mātariṣvā* for a sort of Prometheus of the *R̥gveda*. The conclusion I have come to is that it is only on the assumption that *Mātariṣvā* was originally a *R̥iṣi*—a sacrificer—that all the facts mentioned in the *R̥gveda*, in connection with him, can be explained. Before taking up the discussion, I collect together all the passages in which the word occurs, under groups into which they naturally arrange themselves.

A. *Mātariṣvā* was a *R̥iṣi* :

पृथग्ने मेध्ये मातरिश्वनौद् सुवाने अमन्दयाः ।

यथा सोमं दशशिप्रे दशोख्ये स्रूमरश्मावृज्जनवि ॥ ८ । ५२ । २

In the sacrifice of *Prisadhra*, *Medhya* and *Mātariçvā* you delighted with the brewed *Somā*, O *Indra*. As you did drink the *soma* in the sacrifice of *Daçaçipra*, *Daçanya*, *Sgūmaraçmi* and *Rijunas*.—VIII. 52. 2.

अहमिन्द्रो रोधो वक्तो अथर्वणस्त्रिताय गा अजनयमहेरधि ।

अहं दक्षुभ्यः परि वृषणमा ददे गोत्रा शिक्तन् दधीचे मातरिखने ॥ १० । ४८ । २

I *Indra* stopped the chest (= breathing) of the son of *Atharvā* and for *Tritā* generated water over the body of *Ahi*. I won the wealth of the *Dasyus* and gave the cow-stalls to *Dadhichi* and *Mātariçvā*.—X. 48. 2.

There cannot be any doubt that the *Mātariçvā* of these two *riks* was a *Riṣi*, who offered *soma* libation to *Indra*. The latter was pleased and gave him many cows.

B. *Mātariçvā* is *Agni* especially in the form of lightning :

स मातरिश्वा पुरवारपुष्टिर्विदद्गातुं तनयाय स्त्रिवित् ।

विशं गोपा जनिता रोदस्योर्देवा अग्निं धारयन्द्रविणोदां ॥ १ । ९६ । ४

He *Mātariçvā* rich in all treasures and knower of heaven found the path (to heaven) for his sons. He is protector of the people and generator of heaven and earth. The gods elected *Agni* as giver of wealth.—I. 96. 4.

इन्द्रं मित्रं वरुणमग्निमाहुरथो दिव्यः स सुपर्णा गरुत्मान् ।

एकं सद्विप्रा बहुधा वदन्त्याग्निं यमं मातरिश्वानमाहुः ॥ १ । १६४ । ४६

They call him *Indra*, *Mitra*, *Varuna*, *Agni*. Then he is the heavenly bird with beautiful wings—*Garutmān*. One truth, the sages speak, in various ways. They call it *Agni*, *Yama*, *Mātariçvā*.—I. 164. 46.

तमृत्त्रिया उप वाचः सचन्ते सर्गो न यो देवयतामसर्जि ।

बृहस्पतिः स ह्यब्रुो वरांसि विभ्वाभवत्समृते मातरिश्वा ॥ १ । १९० । २

The words uttered at the proper season adore him (= *Agni*) who shot forth as arrows gods-desiring hymns. He is *Brihaspati* whom *Bibhu* has anointed with rays. He (= *Agni*) became *Mātariçvā* in the sacrifice.—I. 190. 2.

उदु हुतः समिधा यज्ञो अद्यौर्हर्षन्दिवो अग्नि नाभा पृथिव्याः ।

मित्रो अग्निरीड्यो मातरिश्वा दूतो वचद्यजथाय देवान् ॥ ३ । ५ । ९

Being magnified by hymns the great *Agni* shines with kindled fuel in the height of heaven, and on the navel of the earth. May *Mitra* (= the sun), the adorable *Agni* (= ordinary fire) and *Mātariçvā* (= lightning) acting as our messengers bring the gods to our sacrifice.—III. 5. 9.

तं शुभ्रमग्निमवसे हवामहे वैश्वानरं मातरिश्वानमुक्थ्यं ।

बृहस्पतिं मनुषी देवतातये विप्रं श्रीतारमतिथिं रघुष्यदं ॥ ३ । २६ । २

We invoke for protection the brilliant *Agni Vaiçvānara*, *Mātariçvā* worthy of the song of praise. In the sacrifice of man (we invoke) *Brihaspati* (= *Agni*), the sage, the bearer of our prayers, the guest and the swift moving one.—III. 26. 2.

यः पावमानीरथ्यैत्यृषिभिः संभृतं रसं ।

सर्वं स पूतमश्नाति स्वदितं मातरिश्वा ॥ ९ । ६७ । ३१

He who reads the *Pāvamani* verses—the essence stored up by the *Riṣis*, eats every thing purified—sweetened by *Mātariçvā* (= *Agni*).—IX. 67. 31.

समञ्जस्तु विश्वे देवाः समापो हृदयानि नौ ।

सं मातरिश्वा सं धाता समु देष्ट्रो दधातु नौ ॥ १० । ८५ । ४७

May the All-gods ; may the waters unite our hearts. May *Mātariçvā*, may *Dhatā*, may *Deष्ट्र* hold us together.—X. 85. 47.

यावन्मानसुषषो न प्रतीकं सुपर्णो वसते मातरिश्वाः ।

तावद्धात्युष यज्ञमायन्ब्राह्मणो होतुरवरो निषीदन् ॥ १० । ८८ । १९

As soon as the beautiful-winged bird (= the sun) shines like the face of *Uśā*, O *Mātariçvā* (= *Agni*) the inferior mortal *Brāhmaṇ* (priest) comes and begins the sacrifice and sits near the (real) *Hota* (= *Agni*).—X. 88. 19.

तेऽवदन्प्रथमा ब्रह्मकित्त्वियेऽङ्गपारः सलिलो मातरिश्वा ।

वीलुहराक्षप उग्रो मयोभूरापो देवीः प्रथमजा ऋतेन ॥ १० । १०९ । १

In case of the calamity that befell the hymn-singer, these spoke first—the boundless ether, *Mātariçvā*, the darkness-driving, bliss-giving terrible austerity and the water-goddesses, first born from sacrifice.—X. 109. 1.

धर्मा समन्ता त्रिवृतं व्यापतुस्तयोर्जुष्टिं मातरिश्वा जगाम ।

दिवस्वयो दिधिषाणा अवेधन्विदुर्देवाः सहसामानमर्कम् ॥ १० । ११४ । १

May the two fires (= sun and *Agni*) pervade on all sides, the three-fold sacrifice. *Mātariçvā* (= lightning) has gone to please them. The bright gods (= *Agni*, sun and lightning) have sent down milk (= rain-water) from heaven—they know the *Riks* and the *Soma*-songs.—X. 114. 1.

C. *Mātariçvā* brought *Agni* from heaven—from afar to *Vivasvān* as his messenger :

त्वमग्ने प्रथमो मातरिश्चन आविर्भव सुक्रतूया विवस्वते ।

अरेजेतां रोदसी होतृवृयं सप्तोभारमयजो महो वसो ॥ १ । ३१ । ३

You, *Agni*, first appeared to *Mātariçvā* for his skill—to *Vivasvān*. On your election as *Hota*, the earth and the heaven trembled. You, however, sustained their weight, O shining one—you sacrificed to the gods.—I. 31. 3.

अपासुपत्ये सहिष्ठा अमृभूत विशो राजानमुप तस्युर्ऋग्मियम् ।

आ वूनो अग्निमभरद्विवस्वतो वैश्वानरं मातरिश्वा परावतः ॥ ६ । ८ । ४

The mighty (*Mātariçvā*) grasped him (= *Agni* as lightning) in the lap of waters. The people stood near the king (*Vivasvān*), worthy to be glorified by *ṛiks*. *Mātariçvā*, the messenger of *Vivasvān*, fetched *Agni* *Vaiçvānara* from afar.—VI. 8. 4.

स जायमानः पाने व्योमन्याविरग्निरभवन्मातरिश्चने ।

अस्य क्रत्वा समिधानस्य सज्मना प्र द्यावा शोचिः पृथिवी अरोचयत् ॥ १ । १४३ । २

As soon as born in the highest heaven *Agni* appeared to *Mātariçvā*. By his (= *Mātariçvā*'s) skill and the power of the act of kindling, the brilliant one illuminated the heaven and the earth.—I. 143. 2.

आन्यं दिवो मातरिश्वा जभारामग्नादन्यं परि श्येनो अद्रेः ।

अग्नीषोमा ब्रह्मणा वावृधानोसं यज्ञाय चक्रयुः लोकं ॥ १ । ९३ । ६

Of you two (= *Agni* and *Soma*) one (= *Agni*), *Mātariçvā* fetched from heaven ; the other (= *Soma*), the eagle (= *Indra*) churned out of the rock (= clouds). Being strengthened by hymns *Agni* and *Soma* have broadened the world for the spread of sacrifice.—I. 93. 6.

यं मातरिश्वा मनवे परावतो देवं भाः परावतः । १ । १२८ । २

The god (= *Agni*) whom *Mātarīṣvā* fetched from afar for man—from afar.—I. 128. 2.

सद्यंवांसमिव त्वनाग्निमित्था तिरोहितं ।

येन नयन्मातरिश्वा परावतो देवेभ्यो मथितं परि ॥ ३ । ९ । ५

Agni, of his will had in this manner gone away and hidden himself. *Mātarīṣvā* brought him from afar when he was churned out for the gods.—III. 9. 5.

ऋतावानं यज्ञियं विप्रसुकुथ्यमा यं दधे मातरिश्वा दिवि क्षयं । ३ । २ । १३

Whom (= *Agni*) full of truth, adorable, wise, worthy to be glorified by hymns and living in heaven, *Mātarīṣvā* placed (in every house).—III. 2. 13.

The following *rik* refers to the skill of *Mātarīṣvā* probably in getting *Agni* from heaven. Cf. *सुक्रतूयां* in *Rik* I. 31.3 and *अस्य क्रत्वा* in *Rik* I. 143. 2.

प्रास्तोदृष्वोजा ऋष्वेभिस्तत्त शूरः शवसा ।

ऋधुर्न क्रतुभिर्मातरिश्वा ॥ १० । १०५ । ६

He (= *Indra*) whose strength is shining, is to be adored with the shining ones (= *Maruts*). The hero with strength and skill like *Ribhu* and *Mātarīṣvā*, chiselled the bolt.—X. 105. 6.

D. *Mātarīṣvā* brought *Agni* to the *Bhrigus* :

वह्निं यशसं विदथस्य केतुं सुप्रायं वृतं सद्योऽग्र्यं ।

द्विजन्मानं रयिमिव प्रशस्तं रातिं भरद्वागवे मातरिश्वा ॥ १ । ६० । १

Agni, full of fame, the banner of sacrifice, punctual and swift-going messenger, born of two *Araṇis*—*Mātarīṣvā* brought to *Bhrigu* like a treasure, as the best gift.—I. 60. 1.

उदस्तस्मीत्समिधा नाकृष्वोग्निर्भवन्नृत्तसो रोचनानाम् ।

यदौ भृगुभ्यः परि मातरिश्वा गुहा सन्तं हव्यवाहं समीधे ॥ ३ । ५ । १०

When *Mātarīṣvā* kindled for the *Bhrigus*, the bearer of oblations who lay hidden in the cave—*Agni* the best of light became brilliant by kindling and supported up the height of heaven.—III. 5. 10.

E. *Mātarīṣvā* obtained *Agni* by friction :

मयीद्यदौ विभृतो मातरिश्वा षुद्धेष्टुष्टे श्यतो जेन्यो मृत ॥ १ । ७१ । ४

When *Mātarīṣvā* generated *Agni* by churning, he, the moving one of fair colour and noble birth, became established in every house.—I. 71. 4.

यदौमनु प्रदिवो मध्व आधवे गुहा सन्तं मातरिश्वा मथायति । १ । १४१ । ३

When in the ancient time *Mātarīṣvā* produced by churning him who lay hidden in the cave, to offer *soma* libation.—I. 141. 3.

मयीद्यदौ विष्टो मातरिश्वा होतारं विश्वाप्सु विश्वदेव्यं । १ । १४८ । १

When *Mātarīṣvā* entering into the (*araṇis*) produced by churning the *Hotā* (= *Agni*) of many forms and who is dear to all gods.—I. 148. 1. cf. X. 16. 4.

द्यावा यमग्निं पृथिवी जनिष्ठा मापस्त्वष्टा भगवो यं सहोभिः ।

इदैन्यं प्रथमं मातरिश्वा देवास्तत्तुर्मनवे यजत्रं ॥ १० । ४६ । ९

Agni whom the heaven and the earth generated; whom the waters, *Teasta* and the *Bhrigus* with strength, generated. Him as the first and the adorable priest, *Mātariçvā* and the gods chiselled out for man.—X. 46. 9.

F. The following is a very important, but somewhat obscure *rik* on the interpretation of which to a great extent depends the answer to the question we propounded above :

तनूनपादुच्यते गर्भं आसुरो नराशंसो भवति यद्विजायते ।

मातरिश्वा यदभिमीत मातरि वातस्य सर्गो अभवत् सरीमणि ॥ ३ । २९ । ११

The divine foetus is called *Tanūnapāt*. He becomes *Narācaṁsa* when born, and *Mātariçvā* when lying down in the mother. There is a rush of the wind in his march.—III. 29. 11.

I have now collected together all the passages in which the word *Mātariçvā* occurs. They have been arranged in six groups, namely :

- A. *Mātariçvā* was a *Riṣi*.
- B. He is *Agni* especially as lightning.
- C. He brought *Agni* from heaven to *Vivasvān* as his messenger.
- D. He brought *Agni* to the *Bhrigus*.
- E. He generated *Agni* by friction.
- F. *Rik* III. 29. 11.

Now as to A and B instances are very common in the *Rigveda*, in which *Agni* and his discoverers and eminent worshippers have been called by the same name. *Vivasvān*, his son *Yama*, *Brihaspati*, *Atri*, *Angirā*, *Vasistha*, etc., are names of *Riṣis* as well as of *Agni*. Sometimes *Agni* have been called after the names of *Riṣis* and sometimes the *Riṣis* after the names of *Agni*. This is a very natural process and it is daily resorted to in scientific vocabulary. In the present instance *Mātariçvā* is the name both of *Agni* especially in the form of lightning and a *Riṣi*. Why this is so we will presently see.

D and E reveal a confusion of ideas. *Mātariçvā* brought fire from lightning produced in heaven, and he brought it to *Vivasvān*. The process of producing *Agni* by friction, by *मन्यन्* (churning), as the *Riṣis* called it, was discovered by the chariot-making *Bhrigus* (see my article on *Agni* in the National Magazine and *Riks* X. 469; X. 46. 2; II. 4. 2; IV. 16. 20; X. 92. 10). In course of time the gathering of *Agni* from lightning by *Mātariçvā* was nearly forgotten. All that was remembered was a few general facts such as the discovery was made by *Mātariçvā*, for the sake of *Vivasvān*, etc. The other process of producing *Agni* by churning the *Riṣis* had recourse to daily, and had no reason to forget. In course of time they very nearly convinced themselves that this was also the process by which *Mātariçvā* had produced *Agni*. Then remembering that it was one of the *Bhrigus* who first produced *Agni* by churning, they tried to reconcile the two ideas by saying that *Mātariçvā* brought *Agni* to the *Bhrigus* also.

वर्हिं ————— .

भरद्भगवे मातरिश्वा ॥ १ । ६० । १

Those therefore who hold that it was the air or the wind that brought

Agni in the form of lightning, can therefore advance only two arguments in their favour, namely :

1st—The *ṛiks* under group C above say that *Mātarīṣvā* brought *Agni* from heaven—from afar. *Mātarīṣvā* can therefore be only the wind or some other god.

2nd—*Ṛik* III. 29. 11 expressly says that *Mātarīṣvā* was the air or the wind.

As regards the first argument some idea of what actually happened may be obtained on a reference to *Ṛiks* I. 31. 3 ; VI. 8. 4 ; I. 124. 2 and III. 9. 5 (see above).

Agni had gone away and hidden himself in celestial waters. Indra produced him by rubbing one cloud against another. The gods elected him as their *Hota* when the heaven and the earth trembled. (See Hymn I. 31.)

This is one part of the description. All that we need notice here is the fact that once there was a great flash of lightning followed by a terrible thunder-clap, making both heaven and earth tremble. While this happened in heaven, something of a different nature took place on earth. Here king *Vivasvān* was waiting surrounded by the people. The description then goes on and says that *Mātarīṣvā*, a messenger of *Vivasvān*—a mighty one—seized *Agni Vaiṣvānara* in the lap of the waters and brought him down to king *Vivasvān*. *Mātarīṣvā* then placed the fair *Agni* of noble birth in every house.

I do not know what conclusions others will draw as regards what actually happened on that occasion. For myself I have no doubt that the lightning struck a tree or a hut, and *Mātarīṣvā* a *Ṛiṣi* gathered fire from it. *Mātarīṣvā*'s going up to the clouds and seizing *Agni* in the form of lightning there and bringing him to king *Vivasvān*, is merely the language of poetry. Something like this sort of language is even now used when speaking of the men of science, we say they have brought the electricity of the atmosphere under their control and made it drive our carriages and boats. The peculiar language used here may be compared with that in *Ṛik* I. 148. 1. There *Mātarīṣvā* in generating *Agni* by friction has been said to have entered into the *Araṇis*—the fire-drill. Or, we may look at the thing from a slightly different point of view and say that the *Ṛiṣi* who gathered fire from the tree or hut struck by lightning, was afterwards deified and endowed with supernatural powers. The Prometheus of the Rigveda is only *Ṛiṣi Mātarīṣvā* deified by the Vedic bards.

Ṛik III. 29. 11 does not say that *Mātarīṣvā* is the air or the wind. It runs as follows :—

तनूनपाद्बुध्यते गर्भं आशुरो नराशंसो भवति यद्विजायते ।

मातरिश्वा यदस्मिन्मातारि वातस्य सर्गो अभवत् सरीसिंघ ॥ ३ । २९ । ११

The *ṛik* consists of four parts or sentences, about the first three of which there is not much difference of opinion. These speak of the different names that *Agni* bears under different conditions :

- (1) When *Agni* exists as a foetus in the womb of his mother (= *Araṇi* or cloud) he is called *Tanunapāt*.
- (2) He is called *Narācaṃsa* when born, i.e., when he becomes manifest to the eyes.
- (3) When manifested in the atmosphere [or better, when stretched

in the lap of his mother, as explained by Pandit Dayananda Sarasvatī] he is called *Mātariçvā*.

The difficulty is with the last portion of the *ṛik* namely—

“वातस्य सर्गः अभवत् सरीसृपि”

The question is what is the nominative to the verb “अभवत्” in this sentence? It may be the word *सर्गः* immediately preceding it; *अग्निः* which is the general nominative in the first three sentences or *मातरिश्वा*. Those who hold that the *Mātariçvā* who brought fire from heaven as the messenger of *Vivasvān* was the wind, takes *Mātariçvā* as the nominative of “अभवत्”. The passage then stands in translation thus :—

“*Mātariçvā* in his march becomes the rush of the wind.”

I think if due regard be had to the construction of the sentence the word *सर्गः* ought to be taken as the nominative as *Sāyaṇa* has done, and the passage should be thus translated :

“There is a rush of the wind in the march of *Mātariçvā*.” But in either case the question really is what does the passage mean? Does it mean that—

Mātariçvā, i.e., lightning, for that is the meaning of the word in the above *ṛik*, while in motion = *वातः*, the wind? I do not think such a conclusion can in any way be warranted. It is not warranted by the construction of the sentence. It is also in conflict with the knowledge of the Vedic *Risīs* regarding the relation of fire and wind as natural phenomena. They believed that the sun, the lightning and the ordinary fire are only the different forms of the same substance. They also believed that in a latent form this substance exists in the clouds and the plants. These facts have been stated repeatedly over and over again. If they also believed that the wind is also a form of the fire, this fact also should have been similarly mentioned. But in the large number of Hymns on the wind-gods—*Rudra*, *Rudras*, *Maruts* and *Vāta* there is not a single passage that says that *Mātariçvā* is one of their names. The fact has also not been mentioned in any passage in the more than 200 Hymns on *Agni* excepting perhaps in this single sentence. I think the real meaning of the sentence “वातस्य सर्गः अभवत्” is simply that the flight of *Mātariçvā* is like the rush of the wind. This is not a mere guess, for there are other sentences expressing the same idea. In *Ṛik* I. 79. 1 we have—

हिरण्यकोशो रजसो विसरेऽहर्धुनिर्वात इव भ्रजोमान् ।

When heavy showers fall from the sky the golden-haired (lightning) is a raging serpent like the impetuous wind.

But after all, what do those who hold that it was the wind who brought *Agni* from heaven to *Vivasvān* as his messenger, gain by making out that *Mātariçvā* (i.e., lightning) in his rapid march becomes the wind, i.e., that *मातरिश्वा* = *वातः*? Their theory is not thereby proved. For the *ṛiks* given under group C above, all go to shew that he who fetched *Mātariçvā* (= *Agni* as lightning), though named *Mātariçvā*, is different in nature from him. But the equation given above makes the two *Mātariçvās*—lightning and wind—identical in nature.

We have seen that so far as the *ṛiks* in which the word *Mātariçvā*

occurs, are concerned, Roth and Bohtlingk were perfectly right in holding that the word has not been used in the sense of air. I do not think, since their time, anybody has been able to find in the Rigveda any passage in which the word has been so used. But still, before we can safely close the subject, it is necessary to consider a sentence embodying a common-sense view of the matter in the quotation from Max Müller's Gifford's Lectures given above.

" . . . he (*Mātarīcṣvā*) was meant for the air or for the wind that seemed to carry the fire of lightning from the heaven through the air to the earth."

With regard to this statement made by a great scholar and a philosopher, who at the same time possessed a large stock of common sense, we have to consider very carefully, whether it really contains any fact of experience. When a lightning flash passes across the heaven or comes from heaven to earth, does it really *seem* to us that it is being *carried* by the wind. We in Bengal have good deal of experience of thunder-storms. Such storms break out every year at the beginning of the monsoon and often also at the close of it. I have seen lightning flashes in calm as well as in cyclonic weather, but it never seemed to me that the air or the wind was carrying them. Scientifically, such a sensation is impossible on account of lightning discharges being thousands of times swifter than the highest typhonic gale ever observed.

But it may be asked if the facts were as stated by me, why should the Indian authorities from the time of the Atharva Veda, unanimously take *Mātarīcṣva* who brought *Agni* to *Vivasvān* from heaven, to be the wind? The question is not difficult to answer. Towards the end of the Rigveda the *R̥ṣis* came to believe that there are three representative gods of the three regions of the world. *Agni* of the earth, the wind or *Indra* of the mid-region, and the sun of the sky.

सूर्यो नो दिवस्यातु वातो अन्तरिक्षात् ।

अग्निर्न पार्थिवेभ्यः ॥ १० । १५८ । १

This belief was shared in by all subsequent writers. That *Vātaḥ* was the most important god of the mid-region, again, appears to be a very ancient belief and it was only when Indra-worship became popular that this ancient god came to occupy a subordinate position. When the descendants of the *R̥ṣis* failed to grasp the character of *Mātarīcṣvā* as described in the Rigveda, as they did many things else of that ancient book, they took him for *Vātaḥ* as *Agni* was brought through the mid-region and *Vātaḥ* was the god of that region. Or what is more probable, as after his death *Vivasvān* was deified and identified with the sun by the Vedic *R̥ṣis*, so was his priest *Mātarīcṣvā* deified and identified with the air.

The Hero-Gods of the Rigveda.

IV. YAMA.

Yama is the head of the *Pitris*. Like other *Pitris*, he has been represented in the double character of man and god. But the only event of his life as man, mentioned in the Rigveda with sufficient clearness, is his death. There are some incidents of his life which, though they have been represented as if they took place in heaven after his death, are of such a character that they must be held to be connected with his earthly career. Again, we will see that the greatest event of his life has been depicted in a language most mysterious and under altogether a fictitious name (see my paper on *Viṣṇu*). *Yama* was the son of King *Vivasvān* by his wife *Saranyū*. He had a twin sister of the name of *Yami*, two brothers—the twin *Açvins*—and a step-brother, *Manu*. The latter was the son of *Vivasvān* by *Savarnā*, whom he married after *Saranyū*'s death.

A. *Yama as a man.*

त्वष्टा दुहित्रे वहतुं कृणोतीतीदं विश्वं सुवनं समेति ।

यमस्य माता पर्युक्षमाना महो जाया विवस्वतो ननाश ॥ १० । १७ । १

अपागूहन्नमृतां मर्त्यभ्यः कृत्वी सवर्णामददुर्विवस्वते ।

उताश्विनावभरद्यत्तशचीदजहातु द्वा मिथुना सरण्यूः ॥ २

Tvasta gives his daughter in marriage. This made the whole world assemble together. After her marriage the mother of *Yama*, the wife of the great *Vivasvān*, disappeared, i.e., died.—X. 17. 1.

They concealed the immortal from the mortals. They made one of like nature and gave her to *Vivasvān*. And *Saranyū* bore the two *Açvins*, and when that happened (i.e., when she died) she left behind two twins.—2.

The two twins left behind by *Saranyū* are (1) *Yama* and *Yami*; and (2) the two *Açvins*. These two *ṛiks* have been explained in my paper on *Vivasvān*. They tell us that *Vivasvān* was a mortal, and necessarily so his sons—*Yama* and others.

यम ————— ।

विवस्वन्तं हुवे यः पिता ते ——— ॥ १० । १४ । ५

I invoke *Vivasvān*, O *Yama*, who is your father.—X. 14. 5.

गन्धर्वो अप्सख्या च योषा सा नो नाभिः परमं जामि तन्नौ । १० । १० । ४

Yama says to *Yami*: The *Gandharva* of the (serial) sea and the lady of the waters (i.e., *Vivasvān* as the golden-winged bird, the sun; and *Saranyū* as a female bird, his wife, moving in waters. See my paper on *Vivasvān*) are our (*Yama* and *Yami*'s) parents; such is our great kinship.—X. 10. 4.

न वा उ ते तन्वा तन्वं सं पपृच्यां पापमाहुर्गः स्वसारं निगच्छात् । १० । १० । १२

I will not unite your body with mine; they call it a sin to embrace a sister.—X. 10. 12.

The foregoing two *riks* shew that—

- (1) *Yama* and *Yamī* were brother and sister, and they were one of the two twins whom *Saranyū* left behind when she died (*Rik* X. 17. 2).
- (2) *Vivasvān* and *Saranyū* are the same as the *Gandharva* and the *Apyā Joṣā*.

देवेभ्यः कमवृणीत मृत्युं प्रजायै कममृतं नावृणीत ।

बृहस्पतिं यज्ञमकृण्वत ऋषिं प्रियां यमस्तत्त्वं प्रारिरेचीत् ॥ १० । १३ । ४

For the sake of the gods who chose death ; who chose not deathlessness for the sake of creatures ; *Rishi Brihaspati* founded the institute of sacrifice ; *Yama* offered his dear body.—X. 13. 4.

This is a grand *rik* on immortality, the like of which it will be difficult to find in any other language. Rightly understood and properly grasped, this one *rik* should suffice to convince us that *Yama* and *Brihaspati* were human beings and not one, the setting sun and the other, an abstract idea impersonated, as Max Müller and Roth would have us believe. It says that *Yama* as the representative of humanity—why he was so taken will be explained in my paper on *Viṣṇu*—was given the option of either living for ever on earth among men and other creatures or dying—giving up the earthly life and going to heaven and living with the gods. He chose the latter. The *Risīs* were being gradually convinced that death was the door to heaven and immortality—it is necessary for birth among the gods—the highest birth.

B. *Yama discovered the path to the other world.*

परेयिवांसं प्रवतो महौरनु ब्रह्मभ्यः पंशामनुपस्वशानं ।

वैवस्वतं संगमनं जनानां यमं राजानं हविषा दुवस्य ॥ १० । १४ । १

यसो नो गानुं प्रथमो विवेद नैषा गव्यूतिरपभर्त्तवा उ ।

यन्ना नः पूर्वं पितरः परेयुरेना जज्ञाना पथ्या अनु स्वाः ॥ २

Yama followed the (courses of) mighty streams and shewed to many the path—King *Yama*, the son of *Vivasvān*, the gatherer of men—adore him with libations.—X. 41.

Yama first found for us the path ; this path none can take away from us. By this path our fathers of old went and obtained their respective places.—2.

C. *Yama discovered Agni and performed sacrifices.*

Yama, it has been said, was the first among the gods to find out *Agni*, when the latter, tired of carrying libations to the gods, had hidden himself in the depths of the aerial sea, and to elect him as his priest to perform sacrifices. This, taken along with the fact that it was during the reign of his father *Vivasvān*, that *Agni* was gathered from lightning, and the first sacrifice with the *soma*-juice performed, can only mean that acts done by the father, were ascribed to the son, but instead of saying simply that *Yama* did these things while on earth, it has been represented that he did these in heaven.

महतदुह्यं स्यविरं तदासीदनाविहितः प्रविवेशिथापः ।

विश्वो अपश्यद्ब्रह्मधा ते अग्ने जातवेदस्तन्वो देव एकाः ॥ १० । ५१ । १

को मा ददर्श कतमः स देवो यो मे तन्वो बहुधा पर्यपश्यत् ।
 क्राव मित्रावरुणा त्रियन्तर्गुर्विश्वाः समिधो देवयानीः ॥ २
 रेच्छाम त्वा बहुधा जातवेदः पविष्ठमग्निं अप्सोवधौषु ।
 तं त्वा यमो अचिकेच्चित्रभानो दर्शतरुष्यादतिरोचमानं ॥ ३

Varuna: Then there was that great and thick covering by which you had covered yourself and entered into the waters, O Agni. Then one god, O all-knower, saw all your different forms.—X. 51. 1.

Agni: Who saw me? Who among the gods saw my different forms? Tell me, O *Mitra* and *Varuna*, where do all those shining bodies of *Agni* reside by which he goes to the gods.—2.

Varuna: We desire to have you, O all-knowing *Agni*. O god full of variegated lights, *Yama* saw you entering into the waters and the herbs with your different forms—you who live in ten secret places shining beyond others.—3.

यमेन ततं परिधिं वयन्तोऽप्सरस उप सेदुर्वसिष्ठाः । ७ । ३३ । ९

The *Vasisthās* sat near the *Apsarās* who wove the garment of sacrifice out of the yarns spun out by *Yama*.—VII. 33. 9.

अयं यो होता किर स यमस्य कमपूहे यत्समयन्ति देवाः ।

अहरहर्जायते मासिमास्यथा देवा दधिरे हव्यवाहं ॥ १० । ५२ । ३

Who is this *Hota*? Whom of *Yama* he carried when the gods anointed him? He is born day after day (i.e., the sun). He is born month after month (i.e., the moon). The gods appointed him carrier of libations.—X. 52. 3.

Remarks.—(1) This rik shews that *Yama* was a sacrificer, and latterly the *Risīs* regarded *Soma* and the moon as really identical, and so *Agni* and the sun; (2) कं in the male gender as it refers to सोमः or the moon.

अग्निर्जातो अथवर्णां विदद्दिश्वानि काव्या ।

सुवहूतो विवस्वतो वि वो मदे प्रियो यमस्य काव्यो विवक्षसे ॥ १० । २१ । ५

Agni, generated by *Atharvā*, knows all the poetry. You (O *Agni*) became the dear messenger of *Vivasvān*. You (= *Agni*) the object of desire of *Yama*, carry the *soma* libation for the delight of the gods.—X. 21. 5.

यज्ञैरथवां प्रथमः पथस्तते ततः सूर्यो ब्रतपा वेन आजनि ।

आ गा आजदुशना काव्यः सचा यमस्य जातममृतं यजामहे ॥ १ । ८३ । ५

Atharvā first by sacrifices discovered the path. Then the sun—the dear protector of sacred rites—was born, i.e., appeared. Indra, with *Usanā* the son of *Kavi*, won the cows. We adore the immortal one (= *Agni*) generated by *Yama*.—I. 83. 5.

सेनेव स्रष्टामं दधायस्सुर्न दिद्युत्वेषप्रतीका ।

यमो ह जातो यमो जनिष्वं जारः कनीनां पतिर्जनीनां ॥ १ । ६६ । ४

He (= *Agni*) is impetuous like an army hurled against another army, shining like a flame-mouthed dart. *Yama* (= *Agni*) is what is born; *Yama* is what will be born. He is the lover of the maidens and the husband of the matrons.—I. 66. 4.

Remarks.—*Agni* has been called *Yama* as the latter was one of his illustrious worshippers.

दुर्मन्त्राश्चतस्र नाम सलक्ष्मा यद्विषुरुपा भवाति ।

यमस्य यो मनवते सुमन्त्रं तस्यैव पादप्रयुच्छन् ॥ १० । १२ । ६

The nature of the immortals is difficult to understand. He who is akin becomes different in forms. O bright *Agni*, you drink unimpaired of mind him of *Yama*, who for the sake of man becomes easy to understand.—X. 12. 6.

Remarks.—This *rik* will not be understood without some explanation. The *Rigis*, as stated above, latterly believed that the moon and the *soma* are in reality identical. In heaven *Yama* offers to the gods as libation the moon. On earth men offer the *soma*-liquor. The two are सलक्ष्मा, i.e., akin in nature. But they have become different in forms. For the sake of man the moon—the libation of *Yama*—has taken the form of *soma*—a form far easier to understand than the moon.

D. *Yama's world.*

Yama after his death founded a kingdom in the sun where in the cool shade of a tree with beautiful leaves he drinks the ambrosial *soma* with the gods and the *Pitris*, and listens to the music of the flute. It is to this world that he gathers all men who die.

यस्मिन्वृक्षे सुपलाथे देवैः संपिबते यमः । १० । १३ । १

In that tree with beautiful leaves where *Yama* enjoys the *soma*-drink with the gods.—X. 135. 1.

इदं यमस्य सादनं देवमानं यदुच्यते ।

इयमस्य ध्वज्यते नालीरयं गौर्भिः परिष्कृतः ॥ ७

This is the seat of *Yama* which is called the home of the gods.† His flute is played and his *soma* is purified by *riks*.—7.

यस्मिन्देवा विदधे मादयन्ते विवस्वतः सदने धारयन्ते ।

सूर्यं ज्योतिरदधुर्मास्य कूत्परि द्योतनिं चरतो अजस्रः ॥ १० । १२ । ७

In that sacrifice the gods exhilarate in the seat of *Vivasvān*, which they support. They have put light in the sun and beams in the moon. These have been incessantly moving illuminating (the world).—X. 12. 7.

Following the ordinary explanations I have translated the word देवाः in the two foregoing *riks* into “gods,” but I think the word really means here the deified *Pitris*.

सहस्रश्लोथाः कवयो ये गोपायन्ति सूर्यं । १० । १४ । ५

The sages skilled in a thousand ways who guard the sun.—X. 154. 5.

अथा पितृन्सुविदत्राँ उयेहि यमेन ये सध्वमादं मदन्ति । १० । १४ । १०

(Addressing to a deceased.) Then go to the *Pitris*, the sages who drink and revel with *Yama*.—X. 14. 10.

The *Yama's* place is the same as the highest seat—परमं पदं of *Viṣṇu*. Why it is so will be explained later on.

तदस्य प्रियमभि पाथो अश्यां नरो यत्र देवयवो मदन्ति ।

उरुक्रमस्य स हि बन्धूरित्या विषणोः पदे परमे सच्च उत्सवः ॥ १ । १४ । ५

I shall magnify that dear place of his where pious leaders (= *Pitris*) rejoice. In the highest abode of the wide-stepping *Viṣṇu* is the fountain of honey (= *soma-liquor*). He is thus verily our friend.—I. 154. 5.

तिस्रो द्यावः सवितुर्द्वा उपस्थाँ एका यमस्य भुवने विराषाट् ।

आश्विनं न रथ्यममृताधि तस्युरिह ब्रवीतु य उ तच्चिकेतत् ॥ १ । ३५ । ६

There are three heavens of which two are in the lap (*i.e.*, in front) of *Savitā* and one in the world of *Yama* where men are gathered. The immortals rest there firmly as if on the axle-pin of a chariot. Let him who knows declare it here. I. 35. 6.

I shall shew in my paper on *Viṣṇu* that of the three heavens mentioned here one is the old home प्रलोकः of the Aryans, the second is where the Indo-Iranian Aryans halted on their way to the *Sapta Sindhavah*. It was probably near about the place now called Khotan = Kha-sthān—heaven-place. The third heaven, यमस्य भुवने विराषाट्, may be taken in two different senses :

- (1) Where *Yama* settled the Aryans in India. This happened during his lifetime, and the place is *Sapta Sindhavah*.
- (2) Where *Yama* gathered them after their death. This place is the sun. The sun is the शुपलाशः सहस्रवल्लः वृक्षः—beautiful-leaved thousand-branched tree mentioned before. In the *Mahabharat* the sun has been called the अश्वत्थः वृक्षः the *figus religiosa*.

The best description of the place is given at the end of Hymn IX. 113 :

यत्र ओतिरज्ज्वलं यस्मिन्लोकं स्वर्हितं ।

तस्मिन्नां धेहि पवमानाश्रुते लोके अस्ति इन्द्रायेन्दो परिखव ॥ ७

यत्र राजा वैवस्वतो यत्रावरीधनं दिवः ।

यत्राभूर्यज्ञतीरापस्तत्र मामश्रुतं कृधीन्द्रायेन्दो परिखव ॥ ८

यत्रानुकामं चरणं त्रिनाके त्रिदिवे दिवः ।

लोका यत्र ओतिष्मन्तस्तत्र मामश्रुतं कृधीन्द्रायेन्दो परिखव ॥ ९

यत्र कामा निकामाश्च यत्र ब्रह्मस्य विष्टुपं ।

स्वधा च यत्र तृप्तिश्च तत्र मामश्रुतं कृधीन्द्रायेन्दो परिखव ॥ १०

यत्रानन्दाश्च मोदाश्च सुदः प्रसुद आसते ।

कामश्च यत्राप्ताः कामास्तत्र मामश्रुतं कृधीन्द्रायेन्दो परिखव ॥ ११

Where there is endless light ; in that world where the sun is placed ; there in the undecaying deathless world place me, O *Pavamana* (*Soma* when being purified). Flow, O *Indu* (= *Soma*) for *Indra's* sake.—7.

Where *Vivasvān's* son (= *Yama*) is the king ; where is the inner apartment of heaven ; where those mighty waters are ; there make me immortal. Flow, etc.—8.

Where the people move about as they please ; in that painless third heaven of heavens ; where the worlds are full of light ; there make me immortal. Flow, etc.—9.

Where there are desire and desirelessness ; where there is the highest seat of the sun ; where there are food and the enjoyment of food ; there make me immortal. Flow, etc.—10.

Where there are delights and rejoicings, merriments and exultations ; where there are desires and the attainment of desires ; there make me immortal. Flow, etc.—11.

This is the *Paradise* of the Vedic *Ris̥is*—the world of *Yama*—the highest seat of *Viṣṇu*. To this place the *Ris̥is* longed to go themselves after death, and wished others, especially their relations and *yaḡamāns*, to go.

ता वां वास्तून्धूमसि गमथ्ये यत्र गावो भूरिशृङ्गा अयासः ।

अत्राह तदुसगायस्य दृष्ट्वाः परमं पदमत्र भाति भूरि ॥ १ । १५४ । ६

We wish you two (=the sacrificer and his wife) to go to that place where long-horned cows (=the rays of the sun=the *Pitris*) move about. There verily shines in its splendour the highest abode of the wide-stepping *Viṣṇu* who fulfils our prayers.—I. 154. 6.

It is necessary now that I should say a word or two about the celebrated Hymn X. 10.

The hymn narrates a dialogue between *Yama* and his twin sister *Yamī*. *Yamī* proposes that *Yama* should have sexual intercourse with her and beget a son. *Yama* very firmly refuses the proposal as immoral. Max Müller thought that originally the twin *Yama* and *Yamī* represented the day and the night, and their father *Vivasvān*, the sky. This is a mere guess and derives no support from the *Rigveda*. Max Müller is also not consistent in stating his view. In explaining *Yama's* relation to the next world he makes him the setting sun. According to the *Rigveda* *Yama* is neither the sun nor the day. His father, *Vivasvān*, again was after his death identified with the sun and not the sky.

विवस्वता चक्षसा द्यामपश्च देवा अग्निं धारयन्ध्रविणोदां । १ । ९६ । २

He (= *Agni*) (revealed) by the sun-eye, the sky and the atmosphere. The gods appointed *Agni* as giver of wealth.—I. 96. 2.

आ तेन यातं मनसो जवीयसा रथं यं वासुभवश्चक्रुराश्रिता ।

यस्य योगे ब्रुहिता जायते दिव उमे अह्नौ सुदिने विवस्वतः ॥ १० । ३९ । १२

Come, O *Acvins*, in that chariot swifter than mind that the *Ribhus* made for you. Which being harnessed, the daughter of heaven (=dawn) is born. Both the auspicious days come from *Visavān* (=sun).—X. 39. 12.

Roth, on the other hand, was of opinion that *Yama* and *Yamī* were the first human pair, the Indian Adam and Eve, the parents of mankind. He thought the proof of this is to be found in this very hymn. There is no doubt that *Rik* 3 seems to support his view, but I do not think that *Rik* 5 also does the same. I am also of opinion that the *Ris̥is* did not believe that *Yama* and *Yamī* were the first human pair.

ओ चित् सखायं सखा वद्व्यां तिरः पुरु चिदर्नवं जगन्वान् ।

पितुर्नपातमा दधौत वेधा अग्निं क्षमि प्रतरं दीव्यान् ॥ १० । १० । १

Yamī : May I, who have come to this solitary vast ocean, attract towards me a friend by friendship ?

The creator, after much thinking, is offering us the best son on earth.—X. 10. 1.

न ते सखा सख्यं वद्वेतत् ससखा यद्विषू रूपा भवति ।

महस्युत्रासो असुरस्य वीरा दिवो धर्तार उर्विया परिख्यन् ॥ २

Yama : Your friend does not desire this alliance that would make a kinswoman an alien.

The heroes, the sons of the great *Asura*, the supporters of the sky, are looking far and wide.—2.

उच्यन्ति या ते अमृताश्च एतदेकस्य चित्तमजसं मर्त्यस्य ।

॥ ३

Yamī : Even the immortals desire that a son should be left by the sole mortal.

गर्भे नु नौ जनिता दम्पती कर्देवस्त्वष्टा सविता विश्वरूपः ।

नकिरस्य प्र भिनन्ति व्रतानि वेद नावस्य पृथिवी उत द्यौः ॥ ५

Yamī : While we were yet in the womb the god *Tvasṭā*, the creator, the vivifier and the shaper of all forms, made us husband and wife.

In *Rik* 3 एकस्य चित्तमजसं implies that *Yama* has been represented as the sole man, but *Rik* 5 makes *Yamī* simply say, "We were destined to be man and wife." This could be the case even if there were alive at the time other men and women.

But the question really is, did the *Risis* believe that *Yama* and *Yamī* were the first human pair, and was it on this basis that the dialogue in Hymn X. 10 was composed? I think we should answer the question in the negative. In the hymn *Yama* and *Yamī* were quite aware that they were not the only man and woman. *Yamī* saying "they had come to a solitary place" can only mean that there were no other human beings there. *Yama* admitted this, but pointed out that there were invisible gods who saw far and wide—the spies of *Varuṇa* mentioned elsewhere. Then *Yama* saying—

न यत्पुरा चकृमा कद्ध नूनमृता वदन्ती अचृतं रथेम । ४

'Shall we who have always spoken truth utter untruth?'

means that if they would commit the sin proposed by *Yamī*, they should have to speak falsehood to conceal it from fellow-beings? *Yama*'s saying that "they" call it a sin to embrace a sister implies the same thing. For here "they" can only mean the "leaders" among men. Finally, *Yamī* taunting her brother by saying that though he was refusing her he would allow another woman to embrace him as a creeper entwines a plant, and *Yama* retorting that she would be quite welcome to embrace another man, shew clearly that the composer of the hymn did not believe that *Yama* and *Yamī* were the only human pair at the time when this conversation was supposed to have taken place.

Yama has also been said to have been the first of mortals who died. This is the statement of the *Atharvaveda* :—

यो ममार प्रथमो मर्त्यानां ... १८ । ३ । १३

Of the mortals who died first—XVIII. 3. 13.

According to the *Rigveda*, *Yama* was neither the first man born nor the first man who died.

यमो नो गातुं प्रथमो विवेद ... १० । १४ । २

Yama was the first to find out the path (to the heaven) for us—(X. 14. 2.)

does not say that he was the first man who died. This also does not follow from the following *rik* :—

देवेभ्यः कमवृणीत सृष्टुं प्रजायै कममृतं नावृणीत ।

सहस्यति यज्ञमकृत्वत ऋषिं प्रियां यमस्तन्वं प्रारिरेचीत् ॥ १० । १३ । ४

Who for the sake of the gods chose death ? Who chose not deathlessness for the sake of creatures.

Rishi Brihaspati founded the institute of sacrifice ; *Yama* offered his dear body.—X. 13. 4.

The two *riks* taken together mean that other men had been born and died before, but it was *Yama* who, offering his dear body as a sacrifice to the gods, first found out the path to the heaven, that is, attained immortality.

Hymn X. 10 is, in my opinion, not intended to point out that at first only one man and one woman were created and that though they were brother and sister, being children of the same father, they became man and wife and propagated the race. Had this been the object of the hymn, *Yamī* would not have been at a loss to find arguments in support of her proposal, as she appears to be in the dialogue, and *Yama* would not have been made to refuse the proposal in the way he has done. I think the object of the hymn is simply to teach a moral lesson. It is not unlikely that at the time the hymn was composed, the sinful connection which *Yamī* wanted to have, actually used to take place, especially in royal families, and the *Rishi*, taking advantage of the double meaning of the word *Yama*—twin—and one who has controlled his passions, illustrated the moral lesson he wanted to teach by *Yama's* example. The burden of the dialogue appears to be the victory of a God-fearing man over a great temptation.

I give below both in original and in translation Hymn X. 14, one of the very few hymns on *Yama* :—

परेयिवांसं प्रवतो महीरनु बहुभ्यः पंथासनुपस्यशानं ।
 वैवस्वतं संगमनं जनानां यमं राजानं हविषा दुवस्य ॥ १
 यमो नो गातुं प्रथमो विवेद नैषा गव्यूतिरपभर्तवा उ ।
 यत्र नः पूर्वं पितरः परेयुरेना जज्ञानाः पथा अनु स्वाः ॥ २
 मातली कव्यैर्यमो अङ्गिरोभिर्दहस्यति ऋक्भिर्वाग्दानः ।
 यांश्च देवा वावृधुर्यं च देवान्त्खाहान्ये स्वधयान्ये मदन्ति ॥ ३
 इमं यम प्रस्तरमा हि सौदाङ्गिरोभिः पितृभिः संविदानः ।
 आ त्वा मन्त्राः कविशस्ता बहन्त्वेना राजनन् हविषा मादयस्य ॥ ४
 अङ्गिरोभिरा गहि यज्ञियेभिर्यम वैरुपैरिह मादयस्य ।
 विवस्वन्तं हुवे यः पिता तेऽस्मिन्यज्ञे वर्हिष्या निषद्य ॥ ५
 अङ्गिरसो नः पितरो नवग्वा अथर्वाणो भृगवः सोम्यासः ।
 तेषां वयं सुमतौ यज्ञियानामपि भद्रे सौमनसे स्वाम ॥ ६
 प्रेहि प्रेहि पथिभिः पूर्वभिर्यत्रा नः पूर्वं पितरः परेयुः ।
 उभा राजाना स्वधया मदन्ता यमं पश्यासि वरुणं च देवं ॥ ७
 सं गच्छस्व पितृभिः सं यमेनेष्टापूतन परमे वीमन् ।
 हित्वायावद्यं पुनरस्तमेहि सं गच्छस्व तन्वा सुवर्चाः ॥ ८
 अथेत वीत वि च सर्पतातोऽस्मा स्तं पितरो लोकसक्रन् ।
 अहोभिरङ्गिरस्कुभिर्यत्तं यमो ददात्यवसानमस्मै ॥ ९
 अति द्रव सारमेयो स्वानौ चतुरक्षौ शबलो साधुना पथा ।
 अथा पितृन्सुविदत्राँ उपेहि यमेन ये सधमादं मदन्ति ॥ १०

यो ते श्वानौ यम रक्षितारौ चतुरक्षौ पथिराक्षौ वृचक्षौ ।
 ताभ्यामेनं परिदेहि राजन्तस्वस्ति चास्मा अनमीवं च धेहि ॥ ११
 उष्णसावसुतृपा उरुंवलौ यमस्य दूतौ चरतो जनां अनु ।
 तावत्सम्यं दृश्ये सूर्याय पुनर्दातामसुमद्येह भद्रं ॥ १२
 यमाय सोमं सुनुत यमाय जुहुता हविः ।
 यमं ह यज्ञो गच्छत्यग्निदूतो अरं कृतः ॥ १३
 यमाय घृतबद्धविर्जुहोत प्र च तिष्ठत ।
 स नो देवेष्वा यमद्वैर्धमायुः प्र जीवसे ॥ १४
 यमाय मधुमत्तमं राज्ञी हव्यं जुहोतन ।
 इदं नम ऋषिभ्यः पूर्वजैभ्यः पूर्वैभ्यः पथिकृद्भ्यः ॥ १५
 त्रिकद्रुकोभिः पतति षलुर्वीरेकमिदृहत् ।
 त्रिष्टुव्गायत्री कृन्दांश्च सर्वा ता यम आहिता ॥ १६

He followed the (course of) mighty rivers and shewed the path to many. King Yama, the son of *Vivasvân*, the gatherer of men—adore him with libations.—1.

Yama first found for us the path—this path none can take away from us. By this path our fathers of old went and obtained their respective places.—2.

Matali is magnified with the *Kavis*; Yama with the *Angirās*; *Bṛihaspati* with the *Rikvans*—whom the gods magnified and who magnified the gods—these delighted with *svāhā* and those with *svadhā*.—3.

United with our fathers, the *Angirās*, come, O Yama, and sit on this grass seat spread here. May the hymns sung by the *Kavis* bring you. Be exhilarated, O king, with this libation.—4.

Come, O Yama, with the adorable *Angirās*, who can assume any form they please and rejoice in our sacrifice.

I invoke *Vivasvân* who is your father. May he sit on the grass seat in this sacrifice.—5.

Our fathers—the *Angirās*, the *Navagrās*, the *Atharvans*, the *Bṛiḡus*—the offerers of *soma* libations.

May we be in the grace of these adorable ones and in their auspicious good will.—6.

Go forth, go forth, on the old path by which our ancient fathers went. Both the kings exhilarating with *Svadhā*—see Yama and god *Varuṇa*.—7.

Unite with the fathers—unite with Yama—meet with the merits of your sacrifices and of good works, in the highest heaven.

Throwing off sin, come again to your home; unite with a refulgent body.—8. Leave this place [ye evil spirits], go away, be off. The fathers have set apart this place for him (=the deceased).

Yama has purified this place with days (=lights), waters and nights and given it to him to rest in.—9.

Go by the straight path and quickly pass by both the dogs—the four-eyed speckled sons of *Saramā*.

Then meet with those wise fathers who rejoice in the company of Yama.—10.

Those two dogs of yours, O Yama, the protectors, four-eyed, guards of the path and observers of men.—

Make him over to them, O king (for protection)—give him also prosperity and freedom from disease.—11.

Those two messengers of Yama who are broad-nosed, who delight in taking away lives and are mighty strong; and who are ever going after men—may they here to-day give us an auspicious existence that we may see the sun.—12.

Brew the *soma* for Yama, offer him oblations. To Yama goes the sacrifice that is adorned with oblations and of which *Agni* is the messenger.—13.

Offer to Yama oblations full of *ghṛita* and reverently stand near him, that among the gods he may grant us long life, that we may live.—14.

Offer to King Yama a libation full of sweetest honey. This salutation is to the oldest, first-born *Risīs* who made the path.—15.

Yama is the king of the threefold sacrifice—of the six wide regions; he is also the king of the one great place. *Tristup*, *Gayatrī* and other metres reside in him.—16.

From the above it will be seen that *Yama* of the Rigveda is very different from the *Yama* of the Epics and the *Puranās*. According to the composers of the *Riks*, *Yama* was the king of their forefathers, the *Pitris*. On their death *Yama*, along with them, made or discovered the path to the next world and founded a kingdom in the sun. Here the *Pitris*, in the cool shade of a tree with beautiful leaves—a gigantic *ficus religiosa*—enjoy the *soma* drink and the music of the flute. The place is full of light and full of food and drink. The people there move about as they please, and whatever they desire they get. There is no definite statement whether the gentle sex generally went there. But mention is made of the *Apsarās*, the women of the royal family of *Vivasvān*, who produce Agni by means of hymns springing from their heart and prepare the *soma*-juice and perform sacrifices. Of this paradise only general statements are given and no details. The description is not disfigured by anything of an indecent character. The *Risis* themselves expected to go where the *Pitris* had gone before. There is no question of *Yama* judging and punishing anybody. But it should be noted that the germ of the idea of punishment, and of the hell, is to be found in the Rigveda itself. The hymn quoted above speaks of two dogs who served as messengers of *Yama*. They move about in this world to seize the man whose days have been numbered and guard the path to the *Yama's* place. They have been described as exceedingly fierce looking. But they have also been said to be protectors and givers of long life and prosperity. But the whole description taken together leave very little doubt that their great function was to exclude the evil-doers from going to the place of *Yama*.

What the origin of the idea of these two dogs was it is difficult to say. The path by which the *Pitris* went to the sun has been, by some scholars, identified with the *Cincat Bridge* of the Avesta, and this latter again with the *Milky Way*. Mr. Tilak takes the two dogs of *Yama* to represent the two constellations near the base of the Milky Way known as Cananis Major and Cananis Minor. These speculations get no support from the Rigveda. What I think to be the origin of the idea of the path, by which *Yama* and the *Pitris* under him went from this world to the next, will be given in my paper on *Visnu*. The idea of a couple of dogs guarding the path and excluding the wicked and allowing the righteous to go on, is based, I believe, on the simple everyday fact of gates of householders, especially in a rural community, being guarded by dogs. Some idea of the state of the Vedic society in this respect may be obtained from Hymn VII. 55 :—

यदजुनं सारमेय दतः पिशङ्गु यच्छसे ।

वीवभ्राजन्त ऋद्वय उप खक्नेषु वपसतो नि शु स्वप ॥ २

O white son of *Saramā* with tawny spots, when you open your teeth to bite, they flash like spears within your jaws. Go you to sleep.—2.

स्तेनं राय सारमेय तस्करं वा पुनः सर ।

सोतृनिद्रस्य रायसि किमस्मान्दुच्छनायसे नि शु स्वप ॥ ३

Recede, O son of *Saramā*; bark at the robber and thief.

Why bark you at *Indra's* praiser, why harm us ?—Go you to sleep.—3.

The idea of hell arose first in connection with the troublesome non-Aryan *Dasyus*. As the Aryan, after his death, goes to a bright place above; the *Risis* hoped that the godless non-Aryan *Dasyus* would go to a dark cavern. The idea gradually expanded and it was afterwards believed that all wicked persons, whether Aryan or non-Aryan, go to this place.

इन्द्रासोमा तपतं रक्त उज्जतं न्यर्पयतं दृषया तमोदधः ।
 परा शृणोतमचितो न्योषतं हतं नुदेयां नि शिञ्जीतमत्रिणः ॥ ७ । १०४ । १
 इन्द्रासोमा समघशंसमभ्यघं तपुर्ययस्तु चरुरग्निवाँ इव ।
 ब्रह्मद्विषे क्रव्यादे धोरचक्षसे द्वेषो धत्तमनवायं किमीदिने ॥ २
 इन्द्रासोमा दुष्कृतो वत्रे अन्तरनारम्भये तमसि प्र विध्यतं ।
 यथा नातः पुनरेकश्चनोदयत्तद्वामस्तु सहसे मन्युमच्छवः ॥ ३
 प्र या जिगाति खर्गलेव नक्तमपदुहा तत्त्वं गूहमाना ।
 वत्राँ अनन्ताँ श्रव सा पदीष्टु ग्रावाणो घन्तु रक्षस उपब्दे ॥ १७
 इन्द्रासोमा वर्तयतं दिवो वथं सं पुथिव्या अधसंवाय तर्हणं ।
 उत्तक्तं स्वयं पर्वतेभ्यो येन रक्तो वावृधानं निजूर्वथः ॥ ४

Burn the demons, slay them, O *Indra* and *Soma*; throw them down, O Bulls, those who grow in darkness.

Turn away the ignorant, burn them, destroy them, chase them away from us; make the devourers as thin as possible.—VII. 104.1.

Let the praiser of evil be united with evil, O *Indra* and *Soma*. May he be boiled as milk and rice are boiled by fire.

May you entertain an endless hatred towards the hater of prayers, the devourer of raw flesh, the fierce-looking *Kimidin*.—2.

Throw these evil-doers into a dark bottomless abyss, O *Indra* and *Soma*, so that not one of them may get out, so that your wrathful might may prevail.—3.

May that mischievous demoness who like an owl goes about in night hiding her body, fall with force into endless abysses. May the pressing stones by their loud voice destroy the *Rakṣasās*.—17.

अभ्येनामित्रास्तमसा सचन्ताँ । १० । १०३ । १२

May our enemies meet with blinding darkness.—X. 103. 12.

वि न इन्द्रं सुधो जहि नीचा यच्छ पृतन्यतः ।

यो अस्माँ अभिदासत्यधरं गमया तमः ॥ १० . १५२ । ४

Destroy our enemies, O *Indra*; bring them low who would fight with us. Those who would injure us, send them to the nether darkness.—X. 152. 4.

विद्वान्त्स विश्वा भुवनानि पश्यत्यवाजुष्टान्विध्यति कर्त्तै अत्रतान् । ९ । ७३ । ८

He (*Soma*) the wise one beholds all living creatures and dashes into the cavern those who perform no sacred rites.—IX. 73. 8.

अभ्रातरो न योषणो व्यन्तः पतिरिपो न जनयो दुरेवाः ।

पापासः सन्तो अनुता असत्या इदं पदमजनता गभीरं ॥ ४ । ५ । ५

Like young women without brothers, going astray; like wicked wives who hate their husbands;

These men, full of sins, who are untruthful and who perform no sacred rites, have created this abysmal region.—IV. 5. 5.

This dark bottomless nether abyss has not been expressly called a hell (नरक) in the *Rigveda*. The word नरक does not occur there. But there can be no doubt that this is the beginning of the idea of hell. There is also no doubt that the place was conceived as opposite in character to that of the Vedic heaven or paradise. In heaven there is ज्योतिरज्ज् continuous light. In hell there is अन्धं तमः blinding darkness. The heaven is above.

The hell is the nether world. In one, live the Aryan sages. In the other, the non-Aryan ignorant fools.

One thing is clear. In the Rigveda *Yama* is not the god of hell. It is *Nirriti*, the goddess of evils or death, who presides over the dark place, far off from both the earth and the heaven ; where the wicked people are sent and which afterwards came to be called the hell नरक ।

But even in the Rigveda *Yama* seems to have been dreaded to some extent, and it happened this way. Though the *Ris̥is* expected to go to heaven after death, and though they have realised that it is through death that immortality could be obtained, yet they yearned for long lives on earth and had a dread of death. Even *Vasiṣṭha*, one of the greatest of the Vedic *Ris̥is*, says :—

मो षु वरुण सृन्मयं गृहं राजन्नहं गमं । ७ । ८९ । १

May I not yet, O King *Varuna*, go down to the house of clay.—VII. 89. 1.

Yama being the king of the next world, and even he himself and the *Pitris* having gone to heaven through the door of death, came to be connected with death and thus became an object of dread.

मा वो सुगो न यवसे जरिता भूदजोष्यः ।

पथा यमस्य गादुप । १ । ३८ । ५

May your praiser (O *Maruts*) not be unwelcome like a wild animal in the pasture land, nor may he go to the *Yama's* path.—I. 38. 5.

The owl and the dove were considered as *Yama's* messengers and dreaded.

यदुलूको वदति मोघमेतद्यत् कपोतः पदमग्नौ कृणोति

यस्य दूतः प्रहित एष स्तत्तस्मै यमाय नमो अस्तु स्यत्यवे ॥ १० । १६५ । ४

शृचा कपोतं नुदत प्रणोदमिषं मदन्तः परि गां नयध्वं ।

संयोपयन्तो दुरितानि विश्वा हित्वा न ऊर्जं प्र पतात्यतिष्ठः ॥ ५

May what the owl is saying be ineffective and what the dove is saying who has settled near the hearth.

Who has sent it as his messenger, may this salutation be to him, to *Yama*, to Death.—X. 165. 4.

By *riks* drive away the dove who ought to be driven off. Being pleased with our offerings bring us, (O gods), food and cattle and drive away all the evils from us. May the dove fly away, leaving our food.—5.

Mention is also made of the fetters of *Yama* like those of *Varuna* :—

मुचंतु मा शपथ्यादयो वरुण्यादुत ।

अथो यमस्य पङ्क्तिं श्रात्सर्वसाद्देवकिल्बिषात् ॥ १० । ९७ । १६

May the herbs release me from the sin of cursing ; then from the sin I have committed towards *Varuna* ;

And from *Yama's* fetter and from all the sins I have committed towards gods. X. 97. 16.

Nyāyāvatāra : the earliest Jaina work on Pure Logic

By SIDDHA SENA DIVĀKARA

Translated with Notes

By MAHĀMAHOPĀDHYĀYA DR. SATIS CHANDRA VIDYĀBHÜṢAṆA, M.A., PH.D.

INTRODUCTION.

Logic was mixed up with metaphysics and religion in the ancient writings of the Jainas as in those of other sects in India. The first Jaina writer on Pure Logic appears to have been Siddha Sena Divākara. It was he who, for the first time among the Jainas, distinguished logic from the cognate branches of learning by composing a metrical work called *Nyāyāvatāra*¹ on Logic in thirty-two stanzas.

Siddha Sena Divākara is the famous author of the *Sammati-tarka-sūtra*, which is a *Prākṛta* work on philosophy containing an elaborate discussion on the principles of logic. This author who belonged to the *S'vetāmbara* (the white robed) sect has been mentioned by Pradyumna Sūri (1000 A.D.) in his *Vicāra-sāra-prakarana*.²

This famous logician, who was a pupil of Vṛddha-vādi Sūri, received the name of Kumuda-candra³ at the time of his ordination. He is said to have split, by the efficacy of his prayers, the *Linga* (Brāhmanical symbol) of Rudra in the temple of Mahākāla at Ujjaini, and to have called forth an image of Pārśvanātha by reciting his *Kalyāna-mandira-stava*. He is believed to have converted king Vikramāditya to Jainism, 470 years after the *Nirvāṇa* of Mahāvira.⁴ The Jainas believe that he was the spiritual tutor of that famous king, as is evident from the *Kumāra-pāla-caritra* and other works.

It may be noted here that Vikramāditya of Ujjaini has been con-

¹ A manuscript of the *Nyāyāvatāra* by Siddha Sena Divākara together with its commentary called *Nyāyāvatāra-vivṛti* was kindly procured for me from Bhavanagara, Bombay, by Venerable Dharmavijaya and his pupil Indravijayi. For further information about this work see a notice of it in Peterson's Fifth Report on Sanskrit MSS., p. 289. The notes, incorporated in this paper for the elucidation of the translation, are all based on the *Nyāyāvatāra-vivṛti*.

²

पंचेव य वरिसस्य सिद्धसेण दिवायरो य जयपयङ्गो ।

कुचस्य वीरहिय सकृद्युज अज्जरकिं पङ्क ॥ २६ ॥

(*Vicāra-sāra-prakarana*, noticed by Peterson in his Third Report, p. 272.)

³ Cf. *Prabhāvakacarita* VIII, V, 57.

⁴ See Klatt's *Pattāvali* of the Kharatara Gaccha in the *Indian Antiquary*, Vol. XI, Sept. 1882, p. 247.

sidered by scholars to be identical with Yaśodharma Deva, king of Malwa, who, according to Alberuni, defeated the Huns at Korur in 533 A.D. The Chinese pilgrim Hwen-tshang, who came to India in 629 A.D., says that a very powerful king [presumably Vikramāditya] reigned 60 years¹ before his arrival there. From these it appears that Siddha Sena Divākara, who was a contemporary of Vikramāditya, must have lived at Ujjaini about 550 A.D.

Legends and historical accounts show that Siddha Sena was the well-known *Kṣapaṇaka*² (the Jaina sage), who adorned the court of Vikramāditya and was one of the Nine Gems (*Nava Ratna*). Varāhamihira the famous astronomer, who was another of the Nine Gems of the court of Vikramāditya, lived between A.D. 505³ and A.D. 587. We are told that *Kṣapaṇaka* alias Siddha Sena was a contemporary of Varāhamihira; so he must have flourished about the middle of the 6th century.

There is an excellent commentary on the Nyāyāvatāra called the Nyāyāvatāra-vivṛti by Candraprabha Sūri,⁴ who also belonged to the Svetāmbara sect and founded the Purnimā Gaccha⁵ in Samvat 1159 or A.D. 1102. He was a pupil of Jayasimha Sūri and preceptor of

Dharmaghoṣa. He wrote another logical treatise called *Prameya-ratna-koṣa*⁶ and a philosophical treatise called *Darśana-sūddhi* otherwise called *Samyaktva-prakarāṇa*. He was a great logician, and in controversy appeared as a lion before the opponents, who resembled elephants.⁷ In the introduction to his Nyāyāvatāra-vivṛti he has quoted the Buddhist logicians Dharmottara and Arcāṭa, and in the concluding lines has craved the mercy of Jina.

¹ Vide Beal's Buddhist Records of the Western World, Vol. II, p. 26.

² धन्वन्तरिः क्षपणकोऽभरसिंहः शङ्खवृतालभट्टघटखर्परकालिदासः ।
ख्यातो वराहमिहिरो वृषतेः सभायां रत्नानि वै वररचिर्नव विक्रमस्य ॥
(Jyotirvidābharaṇa).

³ Vide Dr. Thibaut's Introduction to *Pañcasiddhāntikā*, p. xxx. Varāhamihira chose Saka 427 or A.D. 505 as the *abda-piṇḍa* of his astronomical calculation, showing thereby that he lived about that time. So—

सप्तशिवेद-संख्यं शककालमपास्य चैव शुक्तादौ ।
अर्द्धास्तमिते भानौ यवनपुरे सौम्य दिवसाद्यौ ॥ ८ ॥

(*Pañcasiddhāntikā*, Chap. I, edited by Dr. G. Thibaut and Sudhākara Dvivedi.)

⁴ See Peterson's Fourth Report, p. xxvii, and Peterson 3, xvi. In the Nyāyāvatāra-vivṛti itself there is no mention of Candraprabha Sūri. I found somewhere that he was the author of it. The authorship of the Nyāyāvatāra-vivṛti must however for the present remain an open question.

⁵ See Dr. R. G. Bhandarkar's Report 1883-84, p. 147.

⁶ Vide Jaināgama List, Bombay, p. 77, and Peterson's Third Report on Sanskrit MSS., Appendix, p. 9.

⁷

तीर्थ वीरविभोः सुधर्मगणभूत सन्तानलब्धोद्भूति
श्रारित्रोत्सव लक्ष्मण चन्द्रगच्छ जलधि मोल्लासशीतद्युतिः ।
साहित्यागमतर्कलक्षण महाविद्यापगा सागरः
श्रीचन्द्रप्रभ सूरिरद्भुतमतिर्वादीभ सिंहोभभवत् ॥ ९ ॥

(*Daśavaikālika-tīkā* by Tilakācārya, noticed in Peterson's Fifth Report, p. 65.)

TEXT AND TRANSLATION WITH NOTES.

प्रमाणं स्वपराभासि ज्ञानं बाधविवर्जितम् ।

प्रत्यक्षं च परीक्षं च द्विधा मेयविनिश्चयात् ॥ १ ॥

1. *Pramāṇa* (valid knowledge) is the knowledge which illumines itself and other things without any obstruction ; it is divided as *pratyakṣa* (direct knowledge or perception) and *parokṣa* (indirect knowledge) as knowables are ascertained in two ways.

This definition sets aside the view of those Buddhists [Yogācāras] who maintain that knowledge illumines itself alone, inasmuch as there is, according to them, no external object beyond it. The same definition is also in direct opposition to the doctrine of the Naiyāyika, Mīmāṃsaka and others who hold that knowledge illumines the external object alone, as it cannot illumine itself. The Jainas maintain that it is only when knowledge illumines itself that it can take cognizance of the external object. So according to them knowledge, like a lamp, illumines itself as well as the object lying outside it.

Those whose sight has been obscured by darkness often see many false images, such as two moons, etc. ; men bewildered by sophism are found to believe that every thing is momentary or the like. With a view to differentiate such kinds of false knowledge from *pramāṇa* (valid knowledge) the phrase " without obstruction " has been used.

Pramāṇa (valid knowledge) is divided here into *pratyakṣa* (direct knowledge) and *parokṣa* (indirect knowledge) including in the latter *anumāna* (inference) and *śabda* (the verbal testimony). This division contravenes the conclusion of Cārvāka that there is only one *pramāṇa*, viz., *pratyakṣa* (perception or direct knowledge), for, *pratyakṣa* cannot be established as a *pramāṇa* except through the medium of the *parokṣa* (indirect knowledge). It also sets aside the view of the Saṅghatas (Buddhists) who divide *pramāṇa* into *pratyakṣa* (direct knowledge or perception) and *anumāna* (inference) without any notice of *śabda* (the verbal testimony).

प्रसिद्धानि प्रमाणानि व्यवहारश्च तत्कृतः ।

प्रमाणलक्षणयोक्तौ ज्ञायते न प्रयोजनम् ॥ २ ॥

2. *Pramāṇas* and the practical use made of them are well known : there appears no necessity for giving any definition of the *pramāṇas*.

There was never a time when the acts of seeing, inferring, etc., were not performed. The use of these acts is also well known for it is through them that we can choose one thing and reject another thing. So it appears superfluous to explain the nature of *pramāṇa* (valid knowledge).

प्रसिद्धानां प्रमाणानां लक्षणोक्तौ प्रयोजनम् ।

तद्गमोहनिवृत्तिः स्याद् व्यासूदनसामिह ॥ ३ ॥

3. The necessity here for giving the definition of the well-known *pramāṇas* is to remove the stupidity from the mind of stupid people.

Pramāṇa (valid knowledge), though well known, is explained here to warn the foolish people from taking false knowledge as true.

अपरोक्षतयार्थस्य ग्राहकं ज्ञानमौदृशम् ।

प्रत्यक्षमितरद् ज्ञेयं परीक्षं ग्रहणेक्षया ॥ ४ ॥

4. Such knowledge that takes cognizance of objects, not beyond the range of the senses, is *pratyakṣa* (direct knowledge or perception) ; the other is known as *parokṣa* (indirect knowledge) in reference to the manner of taking the cognizance.

The words *pratyakṣa* (direct knowledge) and *parokṣa* (indirect knowledge) have been used here in their ordinary acceptations, namely, the first for sense-perceptions, and the second for inference and verbal testimony. In the ancient Jaina scriptures,

however, *pratyakṣa* (direct knowledge) signified perfect knowledge acquired by the soul direct through meditation and not through the channels of the senses, while *parokṣa* (indirect knowledge) signified knowledge derived through the medium of the senses or signs comprising perception, inference and the verbal testimony.

साध्याविनाशुनी लिङ्गात् साध्यनिश्चायकं स्मृतम् ।

अनुमानं तदध्वान्तं प्रमाणत्वात् समक्षवत् ॥ ५ ॥

5. The knowledge determinant of that which is to be proved (*i.e.*, the major term called in Sanskrit *sādhya*), derived through the mark (*i.e.*, the middle term called in Sanskrit *liṅga*) which is inseparably connected with the same, is known as *anumāna* (inference); being a *pramāṇa* it is free from invalidity like perception (*pratyakṣa*).

Inference is of two kinds: (1) *svārthānumāna*, inference for one's own self, and (2) *parārthānumāna*, inference for the sake of others. The first kind is the inference drawn in one's own mind after having made repeated observations. Suppose that having repeatedly seen in the kitchen and other places, that where there is smoke there is fire, and having realised in his mind that there is a universal antecedence of fire in respect of smoke, a man afterwards goes to a hill and entertains a doubt as to whether or not there is fire in it. Instantly, when he observes smoke on it, he recollects the inseparable connection between fire and smoke, and concludes in his mind that the hill has fire in it, as it has smoke on it. This is an inference for one's own self. The inference for the sake of others will be defined later on.

This definition of inference, says the commentator, sets aside the view of certain writers [such as Dharmakīrti the Buddhist] who maintain that non-perception (*anupalabdhī*), identity (*svabhāva*) and causality (*kārya*) are the marks or grounds of inference, or of certain other writers who hold the effect (*kārya*), cause (*kāraṇa*), conjunction (*samyoga*), co-existence (*samavāya*), and opposition (*virodha*) to be such marks or grounds. The division of inference as (1) *ā priori* (*purvavat*, from cause to effect), (2) *ā posteriori* (*śeṣavat*, from effect to cause) and (3) from analogy (*sāmānyato-dṛṣṭa*, perception of homogeneity, that is, the recognition of the subject as being referable to some class, and as being thence liable to have predicated of it whatever may be predicable of the class) [as given in the Nyāya-sūtra of Akṣapāda Gautama] is also hereby set aside.

न प्रत्यक्षमपि ध्वान्तं प्रमाणत्वविनिश्चयात् ।

ध्वान्तं प्रमाणमित्येतद् विरुद्धवचनं यतः ॥ ६ ॥

6. Since it is a *pramāṇa*, *pratyakṣa* (perception), too, is not invalid, for, "a *pramāṇa* is invalid" is an absurd expression.

Some [Buddhists] who maintain that the world is true only from the practical or illusory point of view (*lokaśaṃvṛti*), but false from the transcendental or absolute standpoint (*pūramārthika*), consider perception (*pratyakṣa*) to be merely illusory and consequently invalid from the absolute standard of truth. But this view is opposed by the Jains who maintain that the world is real from all standpoints and consequently perception is not invalid.

सकलप्रतिभासस्य ध्वान्तत्वासिद्धितः स्मृतम् ।

प्रमाणं स्वान्यनिश्चायि द्वयसिद्धौ प्रसिध्यति ॥ ७ ॥

7. Owing to the impossibility of all phenomena (external objects) being invalid, *pramāṇa* is evidently a determinant of self and other things and serves to establish both.

The world is not an illusion: knowledge and its objects are all real.

दृष्टेष्टाव्याहृतत्वाद्वाक्यात् परमार्थाभिधायिनः ।

तत्त्वप्राहितयोस्तनुमानं शब्दं प्रकीर्तितम् ॥ ८ ॥

8. Knowledge arising from words, which taken in their proper

acceptance express real objects not inconsistent with what are established by perception, is known as *sābda* (the verbal testimony).

Sābda (the word or verbal testimony) is of two kinds, viz. (1) *laukika* (the knowledge derived from a reliable person), and (2) *sāstra* (the knowledge derived from scripture).

आप्तोपज्ञमनुलङ्घ्यमदृष्टेष्टविरोधकम् ।

तत्त्वोपदेशकृतं सर्वं शास्त्रं कापयद्यदुतम् ॥ ८ ॥

9. The scripture (*sāstra*) is that which was invented (or first known) by a competent person, which is not such as to be passed over by others, which is not incompatible with the truths derived from perception, which imparts true instructions and which is profitable to all men and is preventive of the evil path.

This definition sets aside the view of those [Mīmāṃsakas] who maintain that the scripture [such as the Veda] is eternal and was not composed by any human being. The scripture could not have been called a verbal testimony (*sābda* or word), unless it embodied the words of any particular person or persons.

स्वनिश्चयवदन्येषां निश्चयोत्पादनं ब्रुवैः ।

परार्थं मानमाख्यातं वाक्यं तदुपचारतः ॥ १० ॥

10. Like the decision for oneself, the production of a decision in others is called by the learned 'knowledge for the sake of others' (*parārtha-māna*); speech is designated as such by metaphor.

Knowledge is of two kinds: (1) knowledge for one's own self (*svārtha māna*), and (2) knowledge for the sake of others (*parārtha māna*). The second is defined as that which produces decision or belief (*niścaya*) in others, i.e., which enables others to ascertain the nature of things. The "word" or "speech" (*sābda* or *vākya*) comes under this class, that is, it is knowledge for the sake of others, for it produces decision in others. It is true the "word" itself is not knowledge, but being the medium through which knowledge is conveyed to others, it is figuratively identified with knowledge.

प्रत्यक्षेणानुमानेन प्रसिद्धार्थप्रकाशनात् ।

परस्य तदुपायत्वात् परार्थत्वं ह्यप्यपि ॥ ११ ॥

11. Perception and inference having disclosed objects with which we are familiar and they being the means of communication to other people, both of them are knowledge for the sake of others.

Perception and inference are as much knowledge for one's own self (*svārtha māna*) as for the sake of others (*parārtha māna*). They are called "knowledge for the sake of others" because the results of perception and inference arrived at by one's own self can be communicated to others through words.

प्रत्यक्षप्रतिपन्नार्थप्रतिपादि च यद्वचः ।

प्रत्यक्षं प्रतिभासस्य निमित्तत्वात्तदुच्यते ॥ १२ ॥

12. A statement expressive of the object ascertained by perception is also called perception; it is so called being the cause of the object's manifestation.

As the result of perception can be communicated to others through the word, the word itself is figuratively called perception. For instance, the deposition of a witness is taken by the judge as equivalent to perception though in truth the judge has not perceived the fact deposed to

साध्याविनाशुबो हेतोर्वचो यत् प्रतिपादकम् ।

परार्थमनुमानं तत् पक्षादिवचनात्मकम् ॥ १३ ॥

13. A statement expressive of the reason (*i.e.*, mark or the middle term called *hetu*) which is inseparably connected with that which is to be proved (*i.e.*, the major term called *sādhya*) having been composed of the minor term (called *pakṣa* signifying a side or place), etc., is called an inference for the sake of others (*parārthanumāna*).

In an "inference for the sake of others" the minor term (*pakṣa*), etc., must be explicitly set forth. The major term or "proven" (*sādhya*) is that which is to be proved. The middle term or reason (*hetu*, *līnga* or *sādhana*) is that which cannot exist except in connection with the major term or "proven" (*sādhya* or *līngi*). The minor term or abode (*pakṣa*) is that with which the reason or middle term (*hetu*) is connected, and whose connection with the major term (*sādhya*) is to be proved. In a proposition the subject is the minor term (*pakṣa*), and the predicate the major term (*sādhya*). The following is an "inference for the sake of others" :—

- (1) This *hill* (minor term) is full of *fire* (major term)—proposition (*pratijñā*);
- (2) because it is full of *smoke* (middle term);
- (3) whatever is full of smoke is full of fire, just as the *kitchen* (example, *dṛṣṭānta*);
- (4) so is this *hill* full of smoke (application, *upanaya*);
- (5) therefore this *hill* is full of fire (conclusion, *nigamana*).

The above is a mediocre (*madhyama*) form of an "inference for the sake of others." Here the minor term (*pakṣa*), the major term (*sādhya*), the middle term (*hetu*) and example (*dṛṣṭānta*) have been used. The worst (*jaghanya*) form of an "inference for the sake of others" consists in a mere statement of the reason or middle term (*hetu*) besides the major term (*sādhya*) and the minor term (*pakṣa*), thus :—

- (1) This *hill* (minor term) is full of *fire* (major term);
- (2) because it is full of *smoke* (middle term).

The best (*uttama*) form of an inference for the sake of others consists in the statement of the following ten parts or members (*daśāvayava*) : (1) proposition (*pratijñā*); (2) correction of the proposition (*pratijñā-sūddhi*); (3) reason or middle term (*hetu*); (4) correction of the reason or middle term (*hetu-sūddhi*); (5) example (*dṛṣṭānta*); (6) correction of the example (*dṛṣṭānta-sūddhi*); (7) application (*upanaya*); (8) correction of the application (*upanaya-sūddhi*); (9) conclusion (*nigamana*) and (10) correction of the conclusion (*nigamana-sūddhi*).

Any form containing less than ten members down to five is called mediocre (*madhyama*).

साध्याभ्युपगमः पक्षः प्रत्यक्षाद्यनिराकृतः ।

तत्प्रयोगोऽत्र कर्तव्यो हेतुर्गोचरदीपकः ॥ १४ ॥

14. *Pakṣa* (the minor term) is that which is asserted to be connected with the (major term or) *sādhya* and is not excluded by perception, etc.; it is to be used here (in an inference for the sake of others) as exhibiting an abode of the reason (*i.e.*, the middle term called *hetu*).

Some philosophers hold that the minor term (*pakṣa*) is not an essential part of an inference. But this view, according to the Jāinas, is untenable, it being absolutely necessary to state the minor term (*pakṣa*) in an inference.

अन्यथा वाद्यभिप्रेतहेतुर्गोचरमोहितः ।

प्रत्यायस्य भवेद्धेतुर्विरुद्धारिक्तो यथा ॥ १५ ॥

15. Otherwise owing to a misconception as to the abode of the reason (*i.e.*, *pakṣa* or minor term) as intended by the disputant, his reason (*hetu* or middle term) may appear to his opponent as absurd.

If any disputant does not explicitly state the minor term (*pakṣa*), his reason might be misunderstood by his opponent, *e.g.* :—

- (1) This *hill* (minor term) is full of *fire* (major term)
- (2) because it is full of *smoke* (middle term).

The above inference, if the minor term is omitted, will assume the following form :—

- (1) Full of fire (major term) ;
- (2) because full of smoke (middle term).

Here the opponent might not at once recollect any abode or place (minor term, *pakṣa*) in which the fire and smoke abide in union, and might mistake a lake for such an abode. In such a case the whole argument will be misunderstood.

धानुष्कगुणसंप्रति जनस्य परिविध्यतः ।

धानुष्कस्य विना लक्ष्यनिर्देशेन गुणेतरो ॥ १६ ॥

16. A man who has come to behold the excellence of an archer will have to behold the opposite of it, if the archer hits without fixing an aim.

Just as a clever archer, with a view to preventing his arrow from going to a wrong direction, fixes his aim before hitting, so a skilful disputant in order to avoid being misunderstood, should in stating an inference mention the minor term (*pakṣa*) with which the major term (*sādhya*) and the middle term (*hetu*) are both connected.

हेतोस्तथोपपत्त्या वा स्यात् प्रयोगोऽन्यथापि वा ।

द्विधान्यतरेणापि साध्यसिद्धिर्भवेदिति ॥ १७ ॥

17. The reason (or the middle term *i.e.*, *hetu*) may be used to show connection or the opposite of it ; in either of these two ways the *sādhya* (that which is to be proved) can be proved.

The reason or middle term (*hetu*) can be used in two ways as follows : (1) the reason or middle term (*hetu*) may exist only if the major term (*sādhya*) existed, such as in the proposition "here there is fire because there is smoke," the smoke (middle term) may exist only if there is fire (major term) ; and (2) the reason or middle term (*hetu*) cannot exist if the major term (*sādhya*) does not exist, such as in the proposition "here there is fire because otherwise there could not be any smoke" the smoke (middle term) could not have existed if there had been no fire (major term).

साध्यसाधनयोर्व्यामिश्रित्र निश्चीयतेतरासु ।

साधर्म्येण स दृष्टान्तः सम्बन्धस्वरणान्तः ॥ १८ ॥

18. Where the inseparable connection of the major term (*sādhya*) and middle term (*sādhana* or *hetu*) is shown by homogeneousness (*sādharmya*), the example is called a homogeneous one on account of the connection (between those terms) being recollected.

An example (*dṛṣṭānta*) is a familiar case which reassures the inseparable connection (*vyūpti*) between the major term (*sādhya*) and the middle term (*hetu*). It is of two kinds : (1) homogeneous (*sādharmya*), and (2) heterogeneous (*vaidharmya*). The homogeneous example is that which reassures the connection (*vyūpti*) by homogeneousness (*sādharmya*) thus :—

- (1) This hill is full of fire (major term) ;
- (2) because it is full of smoke (middle term) ;
- (3) just as the kitchen (homogeneous example).

Here the fire and smoke abide homogeneously in the kitchen.

साध्ये निवर्तमाने तु साधनस्याप्यसम्भवः ।

ख्यायते यत्र दृष्टान्ते वैधर्म्येणेति स स्मृतः ॥ १९ ॥

19. The heterogeneous example is that which shows that the absence of the major term (*sādhya*) is followed by the absence of the middle term.

The heterogeneous example reassures the connection (*vyūpti*) by contrariety, that is, by showing that the absence of the major term (*sādhya*) is attended by the absence of the middle term (*hetu*), thus :—

- (1) This hill has no smoke (major term) ;
- (2) because it has no fire (middle term) ;
- (3) just as a lake (heterogeneous example).

अन्तर्व्यभिचयसाध्यस्य सिद्धिर्वहिर्ददाहृतिः ।

वयं स्यात्तदसङ्गावेऽप्येवं न्यायविदो विदुः ॥ २० ॥

20. Logicians maintain that to cite an example from outside is useless as that which is to be proved (*sādhya*) can be proved through internal inseparable connection (*antar-vyāpti*) even without such example.

Internal inseparable connection (*antar-vyāpti*) occurs when the minor term (*pakṣa*) itself as the common link of the middle term (*hetu*) and the major term (*sādhya*) shows the inseparable connection between them, thus :—

- (1) This hill (minor term) is full of fire (major term) ;
- (2) because it is full of smoke (middle term).

Here the inseparable connection between the fire and smoke is shown by the hill (minor term) which is their common ground.

External inseparable connection (*bahir-vyāpti*) occurs when an example (*dṛṣṭānta*) from outside is introduced as the common link of the middle term (*hetu*) and the major term (*sādhya*) to reassure the inseparable connection between them thus :—

- (1) This hill is full of fire (major term) ;
- (2) because it is full of smoke (middle term) ;
- (3) just as a kitchen (example).

Here the kitchen, which forms no essential part of the inference, is introduced from outside as the common link of the fire and smoke to reassure the inseparable connection between them (the fire and smoke).

Some logicians [such as Vasubandhu] hold that that which is to be proved, that is, the “proven” or the major term (*sādhya*), can be established by the internal inseparable connection (*antar-vyāpti*) alone, so the pointing out of the external inseparable connection (*bahir-vyāpti*) is superfluous. Other logicians go so far as to say that even if the minor term (*pakṣa*) is not used there will be no impossibility in establishing the “proven” or major term (*sādhya*).

- (1) This hill (minor term) is full of fire (major term) ;
- (2) because it is full of smoke (middle term) ;
- (3) just as a kitchen (example).

In the above example “just as a kitchen,” that is, the example, is, according to these logicians, superfluous. Even the minor term (*pakṣa*) can, according to them, be dispensed with thus :—

- (1) Full of fire (major term) ;
- (2) because full of smoke (middle term).

Even here where there is no minor term (*pakṣa*), the example (*dṛṣṭānta*), according to them, is useless.

प्रतिपाद्यस्य यः सिद्धः पक्षाभासोऽस्ति लिङ्गतः ।

लोकस्ववचनाभ्यां च बाधितोऽनेकधा मतः ॥ २१ ॥

21. If that of which the major term or predicate (*sādhya*) is affirmed is opposed by evidence (*liṅga*), the public understanding, one's own statement, etc., we have that which is known as the fallacy of the minor term or thesis (*Pakṣā-bhāsa*) of which there are many varieties.

The semblance or fallacy of the minor term or thesis (*pakṣābhāsa*) arises when one predicates of the minor term (*pakṣa*) that which is yet to be proved to the opponent, or which is incapable of being proved, or when it is opposed to perception and inference, or inconsistent with the public understanding or incongruous with one's own statement, thus :—

- (1) “The jar is corporeal (*paudgalika*)”—this is a conclusion which is yet to be proved to the opponent.
- (2) “Every thing is momentary”—this is a Saugata (Buddhist) doctrine which, according to the Jainas, is incapable of being proved.
- (3) “The general (*sāmānya*) and particular (*viśeṣa*) things are without parts, are distinct from each other and are like themselves alone”—this is opposed to perception.
- (4) “There is no omniscient being”—this is, according to the Jainas, opposed to inference.

- (5) "The sister is to be taken as wife"—this is inconsistent with the public understanding.
 (6) "All things are non-existent"—this is incongruous with one's own statement.

अन्यथानुपपन्नत्वं हेतौर्लक्षणमौरितम् ।

तदप्रतीतिसन्देहविपर्ययैस्तदाभता ॥ २२ ॥

22. The reason (*i.e.*, the middle term called *hetu*) has been defined as that which cannot exist except in connection with the major term (*sādhya*); the fallacy of the reason (*hetvābhāsa*) arises from non-conception, doubt or misconception about it (the middle term).

- (1) This hill is full of *fire* (major term);
 (2) because it is full of *smoke* (middle term).

In this example "smoke" is the middle term or reason (*hetu*) which cannot exist except in an inseparable connection (union) with "fire" which is the major term (*sādhya*).

अविद्धस्त्वप्रतीतो यो योन्यथैवोपपद्यते ।

विरुद्धो योन्यथाप्यत्र युक्तोऽनैकान्तिकः स तु ॥ २३ ॥

23. That which has not yet been established is called "the unproved" (*asiddha*); that which is possible only in the opposite way is called "the inconsistent" (*viruddha*); that which can be explained in one way as well as in the opposite way is called "the uncertain" (*anaikāntika*).

Semblance of the reason or fallacy of the middle term (*hetvābhāsa*) is of three kinds as follows :—

- (1) The unproved (*asiddha*) such as : "the sky-lotus is fragrant because it has the generic property of lotuses." Here the reason, *viz.*, the sky-lotus [which is unreal] has the generic property of lotuses, is unproved.
 (2) The inconsistent (*viruddha*) such as : "this is fiery because it is a body of water." Here the reason alleged is opposed to what is to be established.
 (3) The uncertain (*anaikāntika*) such as : "all things are momentary because they are existent." Here the reason alleged is uncertain because 'existence' may or may not be a proof of momentariness, for, an opponent might equally argue : "all things are eternal because they are existent."

साधर्म्येणात्र दृष्टान्तदोषा न्यायविदीरिताः ।

अपलक्षणहेतूत्याः साध्यादिविकलादयः ॥ २४ ॥

24. Logicians have declared that fallacies of the example (*dr̥ṣṭāntābhāsa*) in the homogeneous form arise here from an imperfect middle term or from a defect in the major term, etc.

Fallacies of the homogeneous example (*sādharmya dr̥ṣṭāntābhāsa*) arise from a defect in the major term (*sādhya*) or middle term (*hetu*) or both or from doubt about them, thus :—

- (1) Inference is *invalid* (major term), because it is a *source of knowledge* (middle term), like *perception* (homogeneous example).

Here the example involves a defect in the major term (*sādhya*), for, perception is not invalid.

- (2) Perception is *invalid* (major term), because it is a *source of true knowledge* (middle term), like a *dream* (homogeneous example).

Here the example involves a defect in the middle term (*hetu*), for, a dream is not a source of true knowledge.

- (3) The omniscient being is not *existent* (major term), because he is not *apprehended by the senses* (middle term), like a *jar* (homogeneous example).

Here the example involves a defect in both the major and middle terms (*sādhya* and *hetu*), for, the jar is both existent and apprehended by the senses.

- (4) This person is *devoid of passions* (major term), because he is *mortal* (middle term), like the *man on the street* (homogeneous example).

Here the example involves doubt as to the validity of the major term, for, it is doubtful whether the man on the street is devoid of passions.

- (5) This person is *mortal* (major term), because he is *full of passions* (middle term), like the *man on the street* (homogeneous example).

Here the example involves doubt as to the validity of the middle term, for, it is doubtful whether the man on the street is devoid of passions.

- (6) This person is *not omniscient* (major term), because he is *full of passions* (middle term), like the *man on the street* (homogeneous example).

Here the example involves doubt as to the validity of both the major and middle terms, for, it is doubtful whether the man on the street is full of passions and not omniscient.

Some unnecessarily lay down three other kinds of fallacy of the homogeneous example (*sādharmya-drṣṭāntābhāsa*), viz. :—

- (1) Unconnected (*ananvaya*), such as : This person is *full of passions* (major term), because he is a *speaker* (middle term), like a *certain man in Magadha* (example).

Here though a certain man in Magadha is both a speaker and full of passions, yet there is no inseparable connection between “being a speaker” and “being full of passions.”

- (2) Of connection unshown (*apradarśitānvaya*), such as :—
Sound is *non-eternal* (major term), because it is *adventitious* (middle term) as a *jar* (example).

Here though there is an inseparable connection between “adventitious” and “non-eternal” yet it has not been shown in the proper form, as :—

“Whatever is adventitious is non-eternal as a jar.”

[Dignāga the Buddhist urged the necessity of converting the example into a universal proposition with a view to show the connection between the middle term and major term in the proper form.]

- (3) Of contrary connection (*viparītānvaya*), such as :—
Sound is *non-eternal* (major term), because it is *adventitious* (middle term).

Here if the inseparable connection (*vyāpti*) is shown thus—

“Whatever is non-eternal is adventitious as a jar,” instead of thus—

“Whatever is adventitious is non-eternal as a jar,” the example would involve the fallacy of contrary connection.

वैधर्म्यं चात्र दृष्टान्तदोषा न्यायविदीरिताः ।

साध्यसाधनयुग्मानामनिवृत्तिश्च संशयात् ॥ २५ ॥

25. Logicians have declared that fallacies of the example in the heterogeneous form arise when the absence of the major term (*sādhya*) or the middle term (*sādhana* or *hetu*) or both is not shown or when there is a doubt about them.

The fallacy of the heterogeneous example (*vaidharmya-drṣṭāntābhāsa*) is of six kinds, thus :—

- (1) Inference is *invalid* (major term), because it is a *source of true knowledge* (middle term); whatever is not *invalid* is not a source of true knowledge as a *dream* (heterogeneous example).

Here the example involves in the heterogeneous form a defect in the major term (*sādhya*), for, a dream is really *invalid* though it has been cited as not *invalid*.

- (2) Perception is *non-reflective* or *nirvikalpaka* (major term), because it is a *source of true knowledge* (middle term); whatever is *reflective* or *savikalpaka* is not a source of true knowledge, as *inference* (heterogeneous example).

Here the example involves in the heterogeneous form a defect in the middle term (*sādhana*), for, inference is really a source of true knowledge though it has been cited as not such.

- (3) Sound is *eternal* and *non-eternal* (major term), because it is an *existence* (middle term); whatever is not *eternal* and *non-eternal* is not an *existence*, as a *jar* (heterogeneous example).

Here the example involves in the heterogeneous form a defect in both the major and middle terms (*sādhya* and *sādhana*), for, the jar is both "eternal and non-eternal," and "an existence."

- (4) *Āpila* is non-omniscient (major term), because he is a non-propounder of the four noble truths (middle term); whoever is not non-omniscient is not non-propounder of the four noble truths, as *Buddha* (the heterogeneous example).

Here the example involves in the negative form a doubt as to the validity of the major term (*sādhya*), for, it is doubtful whether *Buddha* was omniscient.

- (5) This person is untrustworthy (major term), because he is full of passions (middle term); whoever is not un-trustworthy is not full of passions, as *Buddha* (heterogeneous example).

Here the example involves doubt as to the validity of the middle term (*hetu*), for, it is doubtful whether *Buddha* is not full of passions.

- (6) *Kapila* is not devoid of passions (major term), because he did not give his own flesh to the hungry (middle term); whoever is devoid of passions gives his own flesh to the hungry, as *Buddha* (heterogeneous example).

Here the example involves doubt as to the validity of both the major and middle terms (*sādhya* and *sādhana*), for it is doubtful whether *Buddha* was devoid of passions and gave his own flesh to the hungry.

Some unnecessarily lay down three other kinds of fallacy of the heterogeneous example (*vaidharmya-dṛṣṭāntābhāsa*), viz. :—

- (1) Unseparated (*avyatirekī*) : This person is not devoid of passions (major term), because he is a speaker (middle term); whoever is devoid of passions is not a speaker, as a piece of stone (heterogeneous example).

Here though a piece of stone is both "devoid of passions" and "not a speaker," yet there is no unavoidable separation (*vyatireka-vyāpti*) between "devoid of passions" and "a speaker."

- (2) Of separation unshown (*apradarśita-vyatireka*) :
Sound is non-eternal (major term), because it is adventitious (middle term); just as ether (example).

Here though there is an unavoidable separation between "adventitious" and "eternal," yet it has not been shown in the proper form, such as : "Whatever is not adventitious is eternal, just as ether."

[Dignāga the Buddhist urged the necessity of converting the heterogeneous example into a universal negative proposition with a view to point out the connection of the middle term and major term].

- (3) Of contrary separation (*viparīta-vyatireka*) :
Sound is not eternal (major term), because it is adventitious (middle term); whatever is eternal is not adventitious, just as ether (example).

Here the example has been put in a contrary way, for, the proper form should have been : "Whatever is not adventitious is eternal, just as ether."

वाद्युक्ते साधने प्रोक्तदोषाणामुद्भावनम् ।

दूषणं निरवद्ये तु दूषणाभासनामकम् ॥ २६ ॥

26. Refutation (*dūṣaṇa*) is the pointing out of the aforesaid fallacies in the reasoning of an opponent; but it is called a semblance of a refutation (*dūṣaṇābhāsa*) when the reasoning is really devoid of defects.

A disputant is said really to refute his opponent, if the former can detect in the reasoning of the latter any of the fallacies aforementioned. But it will be a mere semblance of refutation if he ascribes to his opponent fallacies which he has not really committed.

सकलावरणमुक्तात्मे केवलं यत् प्रकाशते ।

प्रत्यक्षं सकलार्थात्मसततप्रतिभासनम् ॥ २७ ॥

27. That which is characterised as free from all obstructions and shines as the absolute is called (supreme or transcendental) perception; it uninterruptedly illumines the nature of all objects.

Perception (*pratyakṣa*) is used in two senses : (1) supreme or transcendental (*pāra-mārthika*), and (2) practical (*vyāvahārika*). The practical perception consists of the knowledge acquired by the soul through the channels of the senses such as the visual knowledge, auditory knowledge, etc. Transcendental perception is the knowledge acquired by the soul direct through meditation without the intervention of the senses or signs.

प्रमाणस्य फलं साक्षादज्ञानविनिवर्तनम् ।

केवलस्य सुखोपेक्षे शेषस्याज्ञानहानधीः ॥ २८ ॥

28. The immediate effect of *pramāṇa* (valid knowledge) is the removal of ignorance ; the mediate effect of the absolute knowledge is bliss and equanimity while that of the ordinary practical knowledge is the facility to select or reject.

Pramāṇa (valid knowledge) is of two kinds : (1) *kevala*, absolute and (2) ordinary. The immediate effect of both is the cessation of ignorance. The mediate effect of the absolute knowledge is happiness and equanimity, while that of the ordinary knowledge is the facility which it affords us to choose the desirable and reject the undesirable.

अनेकान्तात्मकं वस्तु गोचरः सर्वसंविदाम् ।

एकदेशविशिष्टोऽर्थो न यस्य विषयो मतः ॥ २९ ॥

29. Since things have many characters (that is, may be conceived from many points of view), they are the objects of all-sided knowledge (omni-science) ; but a thing conceived from one particular point of view is the object of *naya* (or one-sided knowledge).

Objects, whether intrinsic or extrinsic, possess many different characteristics and may be taken from different standpoints. They are understood in their entire character by omniscience alone, while to take them from a certain standpoint is the scope of *naya* (the one-sided method of comprehension).

Naya (the one-sided method of comprehension) is of seven kinds mentioned below :—

- (1) *Naigama* (the non-distinguished) is the method by which an object is taken in its generic and specific capacities not distinguished from each other. For instance, by the term "bamboo" one may understand a number of properties, some of which are peculiar to its own species, while the remaining ones are possessed by it in common with other trees such as a mango, jack, banyan, etc., without any distinction being made between these two classes of properties. The Nyāya and Vaiśeṣika schools of philosophy follow the *Naigama naya*.
- (2) *Samgraha* (the generic) is the method by which the generic properties alone are taken into consideration without any cognizance of the particular properties which, independent of the former, are non-entities, like sky-flowers. Thus, when we speak of a mango, jack or bamboo, we mean that it is a tree. The Advaita and Sāṃkhya systems of philosophy follow the *saṃgraha naya*.
- (3) *Vyavahāra* (the practical) is the method by which the practical or particular alone, is considered, for the general without the particular is a non-entity like the horn of a hare. On being asked to bring a tree, can anybody bring the tree in general ? No, he can bring only a particular tree such as a mango, jack or bamboo.

The Cārvāka philosophy follows the *Vyavahāra naya*.

- (4) *Rju-sūtra* (the straight expression) is the method by which a thing, as it exists at present, is considered without any reference to the past or future. It is useless to ponder over things as they were in the past or will become in the future. All practical purposes are served by the thing itself as it exists at the present moment. For instance, a man, who was formerly (in a previous birth) my son, is now born as a prince somewhere else ; he is of no practical use to me now. So the *Rju-sūtra* recognises only the entity itself (*bhāva*) and does not consider the name (*nāma*), image (*sthāpanā*) or the constituent cause (*dravya*). For instance, a poor cowherd, if he bears the name of *Indra*, does not thereby become the lord of the heavens. An image of a king cannot accomplish the function of the king

himself. The *causes* in me which will lead to my accepting a different kind of body in a future birth cannot enable me to enjoy that body now. Some hold that the atoms alone are true, while practically it is the aggregates or lumps alone that are true. This is *Rju-sūtra*, which is followed by the Buddhists.

- (5) *Śabda* (the verbal) consists in using a word in a conventional sense and not according to its etymological derivation. Thus the word *śatru* usually, or in its conventional sense, means "enemy," while etymologically "a destroyer." The grammarians are the followers of this method.
- (6) *Samabhīrūḍha* (the subtle) consists in making nice distinctions among the synonyms, applying each name appropriately according to their etymological derivation. The grammarians are the followers of this method.
- (7) *Evambhūta* (the such-like) consists in naming a thing only when it possesses its practical efficiency. Thus a man should be named *śakra*, if he actually possesses strength (*śakti*) implied by the name. The grammarians are the followers of this method.

नयानामेकनिष्ठानां प्रवृत्तिः श्रुतवर्त्मनि ।

सम्पूर्णार्थविनिश्चायि स्याद्वादश्रुतमुच्यते ॥ ३० ॥

30. The knowledge which determines the full meaning of an object through the employment, in the scriptural method, of one-sided *nayas*, is called *Syādvāda-śruta*.

The *śruta* or scriptural knowledge is of three kinds, *viz.*: (1) false hearing or knowledge (*mithyā-śruta*), such as that derived from the scripture of the bad Tirthikas; (2) hearing of the one-sided method (*naya-śruta*), that is, the knowledge derived from that part of the Jaina scripture which teaches us to comprehend things from any particular standpoint; and (3) hearing of the all-sided method (*syād-vāda-śruta*), that is, the knowledge derived from that part of the Jaina scripture which teaches us to comprehend things from all-sided standpoints. The *naya-śruta* (knowledge of the one-sided method) has been described in the previous verse. The *syād-vāda* (knowledge of the all-sided method) is described below :—

Syād-vāda, which literally signifies assertion of possibilities, seeks to ascertain the meaning of things from all possible standpoints. Things are neither existent nor non-existent absolutely. A thing may be said to exist in a certain way and to be non-existent in another way, and so forth. *Syād-vāda* examines things from seven points of view, hence the doctrine is also called *sapta-bhaṅgī-naya* (seven-fold paralogism). It is stated as follows: (1) May be, it is (*syād-asti*); (2) may be, it is not (*syād-nāsti*); (3) may be, it is and it is not (*syād-asti-nāsti*); (4) may be, it is indescribable (*syād-avyaktavyam*); (5) may be, it is and yet indescribable (*syād-asti ca avaktavyaṅca*); (6) may be, it is not and also indescribable (*syād-nāsti ca avaktavyaṅca*); (7) may be it is and it is not and also indescribable (*syād-asti ca nāsti ca avaktavyaṅca*).

When a thing is to be established we say "it is," when it is to be denied, we say "it is not." When a thing is to be established and denied in turn, we say "it is and it is not." When a thing is to be established and denied simultaneously, we say "it is indescribable." When a thing is to be established and yet described indescribable, we say "it is and yet indescribable." When a thing is to be denied and also declared as indescribable, we say "it is not and also indescribable." When a thing is to be established and denied as well as declared indescribable at the same time, we say "it is and it is not, and also indescribable." *Syād* which signifies "may be" denotes all these seven possibilities, that is, a thing may be looked upon from one of the above seven points of view, there having been no eighth alternative.

प्रमाता स्वान्यनिर्भाषी कर्ता भोक्ता विवृत्तिमान् ।

स्वसंवेदनसंशुद्धी जीवः क्षित्याद्यनात्मकः ॥ ३१ ॥

31. The spirit (soul or *jīva*) is the knower, doer and enjoyer, illumines self and others, undergoes changes of condition, is realised only in self-consciousness and is different from the earth, etc.

The soul (*ātman* or *jīva*) has knowledge and so is different from knowledge itself. As an enjoyer and doer the soul of the Jaina philosophy is different from that of the

Sāṅkhya philosophy. The soul of the Jainas is described as undergoing changes of condition. In this respect it is different from that of the Nyāya and Vaiśeṣika philosophy.

प्रमाणादिव्यवस्थेयमनादिनिधनात्मिका ।

सर्वसंयवहर्तृणां प्रसिद्धापि प्रकीर्तिता ॥ ३२ ॥

कृतिरियं श्रीशितपट्टसिद्धसेनदिव्याकरस्य ॥¹

32. This system of *pramāṇa*, etc., is beginningless and endless ; though familiar to all persons in every day practice it is yet explained here.

This shows that the world as conceived by the Jainas is eternal.

¹ I beg to acknowledge with thanks that Mr. C. Russell, M.A., has kindly helped me with a number of suggestions and corrections while this paper was going through the press.—S. C. VIDYĀBHŪṢAṆA.

NOTE.

[*Mahāmāhopādhyāya* Dr. Satis Chandra Vidyābhūṣana maintains here that Siddhasena Divākara was identical with the well-known Kṣapaṇaka. This view perfectly commends itself to me. There is proof enough that Siddhasena was a Jaina sage and lived in the court of Vikramāditya. That Kṣapaṇaka was one of the Nine Gems of the court of Vikramāditya is also very widely known, and it remains only to prove that he was a Jaina sage. We have instances enough in the Pañcatantra where the Jaina ascetics are nicknamed as Kṣapaṇaka. The following instances from the Avadāna-kalpalatā will show that the Buddhists also designated the Jaina ascetics as Kṣapaṇaka :—

भगवद्भाषितं तत् सुभद्रेण निवेदितम् ।

श्रुत्वा क्षपणकः क्षिप्रमभूद् द्वेषविषाकुलः ॥ ९ ॥

तस्य सर्वज्ञतां वेत्ति सुभद्रो यदि मद्भिरा ।

तदेव क्षपणश्रद्धां त्यज्यति श्रमणादरात् ॥ १२ ॥

मूर्ख क्षपणभक्तेन तद्भिरा हतयोषिता ।

त्वया त्यक्तस्वपुत्रेण किं नाम सुकृता कृतम् ॥ ४० ॥

(Jyotiṣkāvadāna).

SARAT CH. DAS.]

The Shu'ubiyah Movement in Islam : its Origin, its Growth, and its Results.

By MR. S. KHUDA BUKHSH, M.A., B.C.L.

I.

The history of a nation, apart from the history of its social and political movements, would only illuminate a few yards of the glimmering pathway of humanity, leaving the large tracts of human thoughts and aspirations, slowly maturing to bloom, neglected and unrevealed. Without it, history indeed would degenerate into arid annals or a lifeless compilation. Our conception of history, therefore, is no longer that of a panorama of battle-fields, or successful campaigns, or humiliating retreats. We have a more exalted conception of history and its province. We regard it as the quintessence of national thoughts and national aspirations, linking one age to another in one compact and homogeneous whole. Whatever may be the differences and divergences, certain broad features stand out in bold outlines, common to all nations and to all ages. In every nation at a certain stage of its national existence the emancipated intellect has asserted its rights and privileges, has dreamt dreams of liberty and fraternity, and has made an effort to shake off the tutelage or to remove the obstacles that lay in the path of its progress. Among the progressive nations of the world the intellect has triumphed in its efforts ; while with others the movement has either been prematurely smothered or stifled, or, on account of unfavourable circumstances, has died a natural death. Such has specially been the case with the East where religion and tyranny have always conspired together to keep the mind and the intellect in a degrading subservience. We propose to discuss, in this paper, the history of that interesting movement in Islam known as the Shu'ubiyah movement, and consider the causes which led to its origin, its growth, and finally to estimate its results upon the Islamic Government. Its importance in the history of Islam can scarcely be exaggerated as it was one of the few potent factors which smote the Arab supremacy through and through, and which sowed the seeds of disloyalty and disaffection, bearing their fruits in the rise of Abu Muslim and the overthrow of the Omayyad rule. Ostensibly the Shu'ubiyites were those foreign converts to Islam who, while advocating the excellence of their own respective nationality, refused to acknowledge the superiority of the Arabs ; but the Shu'ubiyah movement was not merely a literary warfare waged between the Arabs on the one hand and the foreign converts on the other, but a political movement having its origin and its basis in the political conditions of the times. The Muslim Empire was composed of a heterogeneous population abounding in variations of temperament, faith, laws, habits and traditions ; a good portion of which, either from genuine conviction or sheer necessity, had accepted Islam. Though Islam had placed these converts on a footing of absolute equality with the Arabs, they yet, to their cost, found that the Islamic teachings of equality and brotherhood were more ' a counsel of perfection ' than a precept to

be followed and observed by the House of Omayyah. This large and ever-growing population lay prostrate under the feet of a tyrannous government, and silently resented the imperious dictation and supercilious haughtiness of their rulers. Their hearts bled at the miseries of the time and their blood boiled at its injustice. The history of this movement, therefore, is the history of a long estrangement and mutual distrust between the Arab Imperialism symbolised in the Omayyad government and the foreign converts to Islam who were ever and anon striving for the recognition of their rights as Muslims and for a direct participation in the state politics as fellow-citizens.

When Mohamed stamped out the Arab heathenism and with it hushed into silence the tribal feuds and jealousies, he proclaimed the brotherhood of all Muslims irrespective of rank and birth. The doctrine of equality of all Muslims so positively preached by the Prophet and so nobly upheld by his two immediate successors was quite foreign and distasteful to the Arab aristocrats, the custodians of Arab heathenism, even after the triumph of Islam, but so long as the Prophet lived and his two successors reigned they were kept well within bounds, and the doctrine of equality of all Muslims was not only an academic proposition but a literal truth. With the accession of Othman things changed, and changed for the worse. The Arab aristocrats apportioned among themselves the most lucrative governorships and the most profitable government posts. For the rule of Islam was substituted the rule of Arab aristocracy, and the contrast between the two—owing to the sudden change—was only too apparent and glaring. Instead of the Caliphs Abu Bakr and Omar, men of candid gaze, of fearless heart, of deep compassion, and infinite concern, the Islamic world had at its head the weak but well-meaning Othman, wanting alike in strength of character and firmness of resolve, and unwittingly playing into the hands of his formidable kinsmen. Hence the conspiracy against him and his subsequent tragic death. It is scarcely necessary for me to go into that deeply stained page of Muslim history dealing with the caliphate of Ali and his sanctimonious son, and the final triumph of Muawiah, the governor of Syria. With the rise of Muawiah fresh problems pressed for solution. The rapid conquests of Islam had widened the ever-growing circle of new converts. Were these to be accorded perfect equality with Arab Muslims as conceded by Islam and its first two Caliphs? The Arab aristocracy, freed from the shackles imposed by the Prophet and his two immediate successors, and in fact in possession of the supreme powers of the State, could not, for a moment, endure or tolerate such a levelling doctrine of equality. For them it was an inconceivable proposition and an astounding claim which called for equality between the free born of the pure Arab race and a foreigner, an Ajami. Filled with the ideals of Paganism which set a value on birth and descent, inconceivable by the moderns, they would not hear of any such concession, but held fast to their notions of exalted superiority, and looked down with contempt upon the newly enlisted band of Muslim converts. If such was the unbending attitude of the Arab aristocracy, let us now look generally into the position of the foreign converts to Islam. They had not only great wealth at their command, but in consequence of their many-sided activities—literary, scientific and professional—they had early secured an undoubtedly important position in Muslim society which, in spite of the contempt in which they were held, did not fail to cause uneasiness to Muawiah and to make the Caliph Abdul Malik sigh for the future of the Arabs. The existence of such a feeling between the rulers and the ruled was not likely to

create sympathy in the one or confidence in the other, and throughout the Omayyad dynasty, we notice the gulf widening more and more and estrangement growing deeper and deeper between the two classes. In the consciousness of military strength the Omayyads forgot that no government could continue for any length of time which rested solely on military support; for "force in one sense is always on the side of the governed, and government in a sense is always dependent upon opinion."¹ A striking illustration of this statement of Hume does the history of the Omayyads offer. The constant quarrels of the North and the South Arabian tribes; the opposition of the pietist party to the ungodlike and unrighteous government of the House of Omayyah; the frequent risings of the Kharijites bitterly hostile to the ruling dynasty; added to these the silent yet powerful discontent of the foreign converts who alternately cast in their lot with the pietists, the Kharijites, the Murji'ites and every insurgent who held out hopes to them—all these combined and conspired indeed to shake the Omayyad rule to its foundation and pave the way for the success of Abu Muslim and the ascendancy of the House of Abbas. The fall of the Omayyads brought better days for the oppressed and the despised converts. The Abbasids, thoroughly imbued with foreign and specially Persian influences, showed a distinct partiality towards the Persians at the expense of the Arabs. Persian fashion, Persian costume, and Persian court etiquette became paramount at the court and in society, and we hear, as it were, a note of discontent in the contemporary literature of the Arabs against this inroad of foreign influences. Compared with the Omayyads the Abbasids represented a policy of toleration which does them credit. The national Arab government, however, perished and perished for evermore. The Abbasids, within almost half a century, became mere ornamental figureheads ruled by foreigners—Persians at first and Turks after. The Persians now took their revenge and began to assail the Arab vanity at its weakest point. They attacked their birth and descent and painted them in the darkest hue, using against them a language as uncomplimentary as the Arabs, under the Omayyads, were wont to apply towards them. A more conciliatory policy towards the subject races would not only have added strength to the purely Arab national government (for such was the Omayyad government) but would have saved it from its premature fall. But the policy of the Omayyads had a yet more disastrous effect. To it we must mainly ascribe the reaction against Arabism, which set in, under the Abbasids, in all its fierce bitterness. It further rent Islam in twain and emphasised the difference between the 'Arab' and 'Ajam' and thereby undid one of the greatest achievements of Islam—the unity and brotherhood of all Muslims. We now proceed to a fuller and a more detailed consideration of the subject.

II.

Islam was a democracy and a perfect brotherhood. Conversion to Islam, according to the teachings of the Prophet, meant an unqualified admission to the theocracy set up by it, and full participation in its rights and privileges, and an absolute extinction of all differences based upon race, nationality or colour. "Truly the most worthy of honour in the sight God," says the Qur'an, "is he who feareth Him most; for the faithful are brethren; wherefore make peace between your brethren." In a similar strain did the Prophet

¹ Hume.

express himself in his parting sermon : " O men, God has taken away from you the arrogance and pride of ancestry of heathen days. An Arab has no other excellence or superiority over a barbarian than what is secured to him by his godfearing and righteousness."¹ Again the Prophet said : " After my death beware of becoming heathens afresh and slaying each other."² The same refrain we find in the following traditions which, whether genuine or apocryphal, express the real spirit of the teachings of the Prophet : O man, forsooth God is one God and the ancestor of all mankind is one : the religion is the same religion, the Arabic speech is neither father nor mother to any one of you, it is naught else but a speech. He who speaks Arabic is thereby an Arab.

He of [the people of] Pars who accepts Islam is as good as a Quraishite.

Did faith reside in the Pleiades, yet would men of this people [the Persians] reach it—a tradition modified as follows : were knowledge suspended to the ends of heaven yet would a section of the people in Pars reach it.³

The instances of Belal the Abyssinian, and Salman the Persian, clearly demonstrate that the Prophet of Arabia never made any distinction between Muslims, whatever was their nationality. The pious Abu Bakr, similarly, made no distinction between Arabs and non-Arabs, slaves and freedmen, so long as they were Muslims. He distributed the state-income among all Muslims : men, women, children, freedmen and clients,⁴ and Von Kremer (on p. 69, Vol. I, of his invaluable *Culturgeschichte des orientes*) specially draws attention to the fact that the second caliph effaced all distinctions between the full-blooded Arabs (Sarih), the half Arab (Halif), and client (Mawla), in assigning annuities. This was quite in keeping with the declaration of his policy which he made in his inaugural address as Caliph. There among other things did he say : " By God ! the weakest among you will appear to me as the strongest until I have secured his rights to him, and the strongest among you will I treat as the weakest until he conforms to law."⁵ Omar treated all Muslims alike, irrespective of their nationality or social position. To an Arab governor who, while refusing to the clients, granted annuities to the Arabs, he issued the following laconic order : " It is reckoned as wicked in a man to despise his brother Muslim." Even to non-Arab converts did Omar assign annuities, to various Persian landowners in Mesopotamea, and to a quondam Christian of Hira. As for foreign converts and their clients he recommended his commanders of troop to treat them on exactly the same footing as Muslims (i.e., Arab Muslims) in whose rights and responsibilities they were to share. He even suggested that they should form a special tribe of their own and receive annuities according to the very same principle which applied to the Arab tribes. Such examples and precepts, however, were not commendable to the aristocratic Arabs, the upholders of the Arab national pride and the founders of the Arab Imperialism. If the democratic principles of Islam had been applied to the neo-converts, the brotherhood of Islam would have been an accomplished fact ; but the entire Islamic system was opposed to the Arab frame of mind. Nor was this unexpected. In the first place, says Prof. Nicholson, the fundamental principle of Islam was foreign and unin-

¹ Von Kremer, *Culturgeschichte*. Streifzüge, p. 22 ; my translation, p. 80-81.

² Von Kremer *Culturgeschichte des orientes*, p. 543, Vol. I.

³ Goldziher, *Muh. Studien*, Vol. I, pp. 116-7 ; Prof. Browne, Vol. I, p. 264.

⁴ Abu Yusuff, apud. Von Kremer, *Culturgeschichte des orientes*, Vol. I, p. 66, note 1.

⁵ Weil, *Geschichte der Chalifen*, Vol. I, p. 54-55.

telligible to the Bedouins. It was not the destruction of their idols that they opposed so much as the spirit of devotion which it was sought to implant in them: the determination of their whole lives by the thought of God and his pre-ordaining and retributive omnipotence, the prayers and fasts, the renouncement of coveted pleasures, and the sacrifice of money and property which was demanded of them in God's name. In spite of the saying, *La Dina illa bi'l-muruwwati* (there is no religion without virtue), the Bedouin who accepted Islam had to unlearn the greater part of his unwritten moral code. As a pious Muslim he must return good for evil, forgive his enemy, and find balm for his wounded feelings in the assurance of being admitted into Paradise. Again, the social organisation of the heathen Arabs was based on the tribe, whereas that of Islam rested on the equality and fraternity of all believers. The religious bond cancelled all distinctions of rank and pedigree; it did away, theoretically, with clannish feuds, contests for honour, pride of race—things that lay at the very root of Arabian chivalry.¹ The Arabs gloried in the purity of their descent and the nobility of their ancestors; and the title of *Ibn Hurratin*, the son of a free mother, was considered, after as before Islam, as a title of special pride and glory.² They believed that only the son of a free-born Arab could protect the honour of the tribe and bring help to the suffering and the oppressed as also carry out the duties and obligations of the *Muruwwa* (the old virtue). Thus does the poet *Tarafa* say:—

وَقَرَّبْتُ بِالْقَرَبِيِّ وَجَدَكَ إِنَّهُ * مَتَى يَكْ أَمْرٌ لِلذَّكِيَّةِ أَشْهَدُ
وَإِنْ أَدْعَ فِي الْجَلِيِّ أَكُنْ مِنْ حُمَاتِهَا * وَإِنْ يَأْنِكَ الْإِعْدَاؤُ بِالْجَهْدِ أَحْبَدُ

“I sought approach to you by the common tie of relationship, and by your good fortune, O malik, I do present myself to help you when an affair demanding serious efforts presents itself.

“And if I am called on by you in any serious affair, I will be amongst the defenders of your honour, and if the enemy comes to you, striving for your destruction, I will strive in repulsing him.”³

And with noble pride for the services rendered to his tribe does *Imra' ul-Qais* sing:—

وَقَرَبَةُ أَقْوَامٍ جَعَلْتُ عَصَامَهَا * عَلَى كَاهِلٍ مِنِّي ذَلُولٍ مُرَحَّلٍ

“And many a leather water-bag of the people I have placed its strap over my shoulder, submissive and repeatedly saddled with it.”

Among the Arabs the feeling of kinship and the duties which it involved were regarded as almost sacred, and, therefore, they thought that none but a full tribe-man could satisfactorily discharge those duties. It was considered as an indelible stain upon a tribe which counted a female slave as its ancestress. *Inna uma kum amatun* (your mother is a female slave), thus does a poet attack the *Banu Nujayh* of the tribe of *Darim*; and according to *Ibn Abd Rabbih* (*Iqd. III, 296*) the *hajin*, i.e., the son

¹ Prof. Nicholson, *Lit. Hist. of the Arabs*, p. 178.

² *Goldziher*, Vol. I, p. 122.

³ *Arnold's edition of the Moallaqat*, p. 89.

⁴ *Arnold*, p. 22.

of an Ajamiya or non-Arab woman, did not inherit in the times of ignorance. Even the brave and chivalrous Antara did not escape the reproach of descent from a negress, and, as a protest against the Arab pride, he composed some of his finest verses :—

إِنْ أَنْكَرْتَ فَرَسَانُ عَبَسَ نَسَبِي * فَنَسَنَ رُمَحِي وَالْحَسَامُ يَقُولِي

And again :—

أَذْكَتُ عَبْدًا وَدَنِيًّا فِي النَّسَبِ
فَالسَّيْفُ يَكْسِبُنِي فَخَارًا وَحَسَبُ
سَيْفٍ إِذَا جَرَدَتْهُ يَوْمَ الْغَضَبِ
ذَلَّتْ لَهُ أَعْنَاقُ سَادَاتِ الْعَرَبِ¹

Though the children of an Arab from a slave girl or freed woman were looked upon as legitimate, yet the aristocratic Arabs would not treat them as their equal in rank and position. Many Arabs were so proud of their descent from their father's and mother's side that they refused to believe that anybody could equal them. This is expressly related, says Goldziher, of Ukail-b-Alafa, the poet of the Banu Murra.² In this connexion we might recall the immortal lines of Tarafa :—

وَإِنْ يَلْتَقِ الْعَمِيُّ الْجَمِيعُ تَلَانِي * إِلَى ذُرَّةِ الْبَيْتِ الْكَرِيمِ الْمَصْدِ

The Caliph Hisham told Zaid ibn Ali ibn Hussain : " It has come to my knowledge that you are coveting after the Caliphate and that you are very anxious to secure it, but you are not the man for it inasmuch as you are the son of a slave-girl."³ Born and bred in an atmosphere of the most narrow conservatism, the ruling Arabs were not likely to treat foreign converts as their equals. This was a demand—though repeatedly made by the neo-converts and the pious and the god-fearing Arabs for them—which the ruling race could not for a moment entertain, being opposed to the inherited notions of racial pride. Were the conquerors and the conquered to be on the same level and the same footing? Were they to stand on the same platform and shake hands with each other as brothers and equals. The Arabs peremptorily declined to concede any such privileges to the neo-converts. Here the Arab Imperialism and the Islamic theocracy stood in an irreconcilable hostility to each other. The ruling Arabs would not yield and the Muslim converts would not unhesitatingly submit to the artificial barriers created by their rulers; nor could they silently tolerate the invidious distinctions and the sneering contempt of the governing power. A collision between the ruling Arabs and the subject races was inevitable, and when it did come, the Arab Imperialism could not resist its overwhelming tide. The crash of accumulated wrongs fell upon the Omayyads, and with a weight which destroyed them root and branch.

¹ Z.D.M.G., Vol. II, pp. 190, 192.

² Goldziher, Vol. I, p. 131.

³ De Goeji, *Frag. Hist. Arab*, Vol. I, p. 93.

The misunderstanding between the Arabs and the Neo-Muslims contributed largely to the incessant insurrections and rebellions against the Government which took place in Iraq and gave so much trouble to the Omayyad Caliphs that they had to send so energetic a Governor as Hajjaj to restore peace and establish authority. The Omayyads' was a purely national government and their entire policy bears its impress.

It was in pursuance of this policy, that Abdul Malik introduced Arabic coinage in general use, for hitherto Roman and Persian coins circulated in the Muslim Empire,¹ and had the government accounts, hitherto kept in Greek in Damascus, and in Persian in Kufah, transferred into the Arabic language. Arabicising, says Professor Wellhausen, started it seems (according to Beladhuri, p. 300; Fihrist, 242) from Kufah. Zaddan Farukh-b-Piri or his son Mardan Shah was the last Persian accountant. His assistant, Salih-b-Abdur Rahaman, offered to keep the accounts in Arabic for Hajjaj, and he managed to do so even though it gave him some trouble to express the fractions—numerical figures were not employed in Kufah. The Greek accounts in Damascus were transferred into Arabic by Sulaiman-b-Sa'id. The Greek and Persian systems, however, were maintained; only the language was changed, and the foreigners continued to be as indispensable to the government as ever, for the Arabs were deficient in technical knowledge and clerical training.

We now pass on to consider the position of the Mawali (the clients) in the Muslim society and their relation towards the ruling power.

III.

The Arab tribal system was founded upon unity of blood, upon real or feigned kinship, and as such, in theory at least, held by itself and refused aliens a permanent settlement in its midst; but as a matter of fact each individual tribe had a number of freed men and refugees within its circle who were incorporated into it either by affiliation or adoption. The weaker tribes, for purposes of safety and protection, largely resorted to affiliations and adoptions, and "the adoption of individual protégés to full tribesmanship must in late times have been very common, for Hilf and Da'i, sworn ally and adopted son, are often taken as synonymous terms."² In the earliest times Mawla simply meant a kinsman, and even in the Qur'an Mawalikum (33. v.) is used as a synonym for Ikhwanukum. But we gradually notice a distinction made between Mawla-l-wilada, *i.e.*, a kinsman by birth and Mawla-l-yamin, a kinsman by oath: a distinction further deepened when Mawla (one admitted into the tribe by affiliation) was used in contradistinction to Samin or Sarih (a full-blooded member of the tribe). This distinction, however, was only observed in the blood-money; for the blood-money for the death of a dependant was not so high as for a Sarih; otherwise protector and protected shared the risks and benefits of the blood-feud; the protector was bound to avenge his halif's blood, and he himself or any of his people was liable to be slain in the halif's quarrel, as the latter was in the quarrel of his protector. Further, in Medina at least, the sworn ally had a claim on the inheritance of his protector.

The rule obtaining with regard to it is expressed by the Arabs: *Al-wala luhma ka-luhmat al nasab* or *al wala nasab thabit*, *i.e.*, clientship creates

¹ Wellhausen, *Das Arabische Reich und Sein Sturz*, pp. 135-137.

² Robertson Smith, *Kinship and Marriage in Arabia*, pp. 54, 55.

strong kinship. Again, *Maula-l-Qaum* minhum or *min Anfusihi*, *i.e.*, the *Mawla* of a tribe is to be regarded just as one of its original members.¹ It is obvious, therefore, that in the earliest times the word *Mawla* was not exclusively applied, as it was later on, to foreign converts to Islam or non-Arabian clients.

With the unceasing conquests of Islam foreign converts streamed into Arabia, in larger and larger numbers, and formed a part of the Arab nation. They were not the sworn allies, the *hulafa*, but captives of war who escaped slavery by conversion to Islam, and thus acquired the status of clients. The clients, after the conquest, therefore, were non-Arabs, since Arabs might not be enslaved. The *Omeyyads*, however, applied the term to all non-Arab Muslims, and called clients all Muslims of Persian nationality, who having been magians and members of a tolerated sect, had embraced Islam; as well as all such persons as had attached themselves to the Arabs or had taken refuge with them. They used to call them the 'Red Party,' a word which the native lexicographers say is equivalent to non-Arab.² Their rank was steadily swelled with the hundreds and thousands of white and black slaves sent as presents to the Caliph or at times in lieu of land-tax.³ Even as early as the time of *Muawiah* these clients had become sufficiently numerous to make that clear-sighted statesman uneasy as to their future. He accordingly desired to massacre them all or partially, but before taking such an extreme step he consulted some of the chief statesmen in whom he reposed trust and confidence, such as *Al-Ahnaf ibn Qais* and *Samurah ibn Jundub*. He told them that he found this 'red race,' *i.e.*, the clients, were ousting the earlier Muslims, and he was in hourly dread of an assault by them on the Arabs and the supreme power. "I suggest, then," he said, "that I should kill a large portion of them, leaving the remainder to maintain the market and keep up the roads. What do you think? *Al-Ahnaf* would not approve of such a course but *Samurah* agreed with the Caliph and even volunteered to carry out himself the massacre of the clients. *Muawiah*, however, adopted the advice of the former and desisted. *Muawiah* anticipated the difficulties which the racial question would bring in its train, and his forebodings were realized, and only too soon. At the commencement of Islam, says *Zaydan*, the Arabs occupied themselves only with governing and politics; all other occupations, especially arts and crafts, were relinquished by them to non-Arabs. One of their proverbs places folly with weavers, spinners, and teachers, these being trades pursued by members of tolerated creeds.⁴ The Arabs, intoxicated with victory, cared little for anything except poetry and history, and to these also they devoted such scant attention that they were soon outstripped by the foreigners, the despised clients. Moreover, their want of acquaintance with calculation and clerical work rendered them unfit for the public offices which in spite of the *Omeyyad* chauvinism, were mostly held by members of tolerated creeds and clients. Not only in the government are the foreigners always to the front, says *Goldziher*, but we find them also in the foremost ranks in the specifically religious sciences. It almost seems, says *von Kremer*, that these scientific studies (reading and exegesis of the *Qura'n*, sciences of tradition and law) were during the first two centuries [of the *Hejira*] principally worked by clients [*Mawali*, *i.e.*, non-Arab Muslims]; while the Arabs proper felt themselves more drawn to the study

¹ *Goldziher*, Vol. I, p. 117.

² *Zaydan*, *Umayyads and Abbasids*, p. 52.

³ *Ibid*, p. 113.

⁴ P. 71.

of their ancient poetry, and to the development and imitation of the same ; but, we would add, even in this field they were often outstripped by the foreigners, whose men of learning in no small degree advanced this sphere of the Arabian genius by literary and historical studies on the antiquities of the Arabs, by thorough critical researches and so forth. It would be superfluous to cite here the many names whereof the mere sound affords proof of what Arabic grammar and lexicology owe to non-Arabs ; and even if we cannot permit Paul De Lagarde's assertion that " of the Mohamedans who have achieved anything in science, not one was a Semite " to pass in this absolute form, yet so much at least may be said that alike in the specially religious studies as in those which grew up round the study of the Arabic speech, the Arabian element lagged far behind the non-Arabian. And this was principally the fault of the Arabs themselves. They looked down with sovereign contempt on the studies so zealously prosecuted by the non-Arabs, considering that such trivialities were unworthy of men who could boast of so proud an ancestry, but befitted only the pedagogue anxious to gloss over with such pigments his dingy genealogy. It befits not the Quraishite—in such words a full-blooded Arab expresses himself—to go deeply into any study save that of the old histories of the Arabs, especially now, when one has to hand the bow and attack the enemy. Once a Quraishite, observing an Arab child studying the Book of *Sibawaiyh*, could not refrain from exclaiming : ' Fie upon thee ! That is the learning of schoolmasters and the pride of beggars ! ' For it was reckoned as a jest that anyone who was a grammarian, prosodist, accountant or jurist (for the science last mentioned arithmetic is indispensable) would give instruction in these subjects to little children for sixty Dirhams (for what length of time is not unfortunately mentioned)."

The greatest of the Arab historians has come to the same conclusion as Dr. Goldziher, and it would be interesting to hear him : " The first Muslims were entirely ignorant of art and science, all their attention being devoted to the ordinances of the Qur'an which they carried in their breasts and to the practice (*sunna*) of the Prophet. At that time the Arabs knew nothing of the way by which learning is taught, of the art of composing books, and of the means whereby knowledge is enregistered. Those, however, who could repeat the Qur'an and relate the traditions of the Prophet were called ' readers ' (*Qurra*). The oral transmission continued until the time of Harun-al-Rashid, when the need of securing the traditions against corruption or of preventing their total loss caused them to be set down in writing ; and in order to distinguish the genuine traditions from the spurious, every *Isnad* (chain of witnesses) was carefully scrutinised. Meanwhile the purity of the Arabic tongue had become impaired ; hence arose the science of grammar ; and the rapid development of law and divinity brought it about that other sciences, *e.g.*, logic and dialectic, were professionally cultivated in the great cities of the Muslim Empire. The inhabitants of these cities were chiefly Persians, freedmen and tradesmen, who had long been accustomed to the arts of civilisation. Accordingly the most eminent of the early grammarians, traditionists and scholastic theologians, as well as of those learned in the principles of law and in the interpretation of the Qur'an were Persians by race or education ; and the saying of the Prophet was verified : " if knowledge were attached to the ends of the sky, some amongst the Persians would have reached it." Amidst all this intellectual activity the Arabs, who had recently emerged from a nomadic life, found

¹ Goldziher, Vol. I, p. 119 ; Von Kremer, *Culturgeschichte*, Streifzüge, p. 16. My translation, p. 72.

the exercise of military and administrative command too engrossing to give them leisure for literary avocations which have always been disdained by a ruling caste. They left such studies to the Persians and the mixed race (Al-muwalladun) which sprang from intermarriage of the conquerors with the conquered. They did not entirely look down upon the men of learning but recognized their services, since after all it was Islam and the sciences connected with Islam that profited thereby.¹ The Arabs, as a nation, loved to live up to the ideals of paganism, caring little for scientific and literary pursuits; but we do not thereby suggest that they altogether neglected such studies. The intellectual history of Islam can point to many genuine Arabs of the type of Al-Mu'arrij (d. 195 A.H.) of the tribe of Sadus who has said: "I came from the desert and I knew nothing of the rules of the Arabic language. My knowledge was merely instinctive and for the first time did I learn its rules in the college of Abu Zaid-ul Ansari al-Basri." But the Arab, says Goldziher, had completely to change his very nature and recast it in the mould of a foreign culture before he could take up theoretical sciences as subjects of his study.² By wealth and learning the Mavali made their power felt in Muslim society though the ruling Arabs would not hold them as their equals and peers. The conversation between Abdul Malik and Zuhri, happily preserved and handed down to us, illustrates the position acquired by the Mavali even as early as the time of Abdul Malik. Ibn Sahl relates in his travels that Al-Zuhri, the famous theologian, happening to be once at the court of the Caliph, introduced himself to the Commander of the Faithful. The following conversation took place between the ruler and the *savant*.

Caliph: Whence dost thou come?

Zuhri: From Mekka.

Caliph: Who exercised authority over the people at the time of your residence there?

Zuhri: 'Ata, son of Rabah.

Caliph: Is he an Arab or a Mawla?

Zuhri: A Mawla.

Caliph: How did he succeed in obtaining this influence over the Mekkans?

Zuhri: By his piety and knowledge of the traditions.

Caliph: Just so; distinction among men comes to the Godfearing and the learned in the traditions. Well, now, who stands in prominence in Yaman?

Zuhri: Ta'us, son of Kaisan.

Caliph: Is he an Arab or a Mawla?

Zuhri: A Mawla.

Caliph: How has he attained this influence?

Zuhri: By the very same qualities as 'Ata.

Thus did the Caliph question him about all the provinces of Islam and was informed by Zuhri that in Egypt, Yazid b. Abi Habib; in Syria, Makhul, the son of a captive of war from Kabul whom a Hudhailite, in whose service he was, had granted his freedom; in Mesopotamia, Mamiun B. Mehran; in Khurasan, Al-Dhahhak; in Basrah, Al-Hasan ibn u-l-Hasan; in Kufa, Ibrahim An-Nakhai; all these were pure Mavali who played the rôle of leaders in the Muslim society. When the Caliph expressed his astonishment at this state of affairs which would

¹ Ibn Khaldun, *Muqaddima* (Beyrut, 1900), pp. 543 seq. Apud Prof. Nicholson's *Literary History of the Arabs*, p. 278.

² Goldziher, p. 122, Vol. I.

inevitably lead to the **Mawali** wresting the rule from the Arabs and making the latter their subjects, Zuhri said : "So it is, O Commander of the Faithful ! This is effected by the command of God and His religion ; he who observes these, attains to authority ; he who neglects them, goes under.¹ It is related of **Muslim-b-Yasar**, a **Mawla**, that none in his time was more respected than he.² These clients distinguished themselves as **Huffaz** (persons who knew the Qur'an by heart), commentators, lexicographers, poets and scholars, and as such they gained a considerable influence with the people as well as the pietist party—not quite a negligible factor in the early Muslim politics. To the **Mawali** belonged most of the intellectual men who adorn the literary history of Islam, and we need scarcely cite more than a few instances here. Mohammed Ibn Ishaq, author of the "Life of the Prophet," was the grandson of one of those forty, named Yasar.

To the clients, moreover, belonged such men as **Abu Safar**, of the captives of Daba in the time of Abu Bakr ; **Hammad**, the reciter of poetry whose father was a Dailemite by birth, of the captives taken by Mukhnif, son of Zaid of the Horses ; **Sa'ib Khathir**, by origin of the captives taken when Persia was conquered ; the poet **Marwan**, son of Abu Hafsah, descended from a Jew taken captive at Istakhar ; the grammarian **Al-Harawi**, originally a prisoner who fell into the lot of some Bedouin Arabs ; **Ibn al-Arabi**, originally of Scinde ; **Abu Dulamah**, a black slave at Kufah to an Arab of the Banu Asad who manumitted him.³ We might indefinitely multiply this list, but it is enough to show that the clients had early enough made a mark in the world of letters and had secured a position of considerable weight in the Muslim community which the Arab Government could not altogether ignore. They had acquired importance not only in the world of letters but were indispensable to Government as clerks in offices and as traders and artisans. Besides these there were fighting clients. To each Arab tribe there were attached a number of these, often more numerous than the tribe itself. When the tribe went fighting, they went out with it and fought for it. The proportion between clients and patrons varied at different times. In Ali's time the number of clients who went to war was to the number of citizens as one to five ; in the Omayyad period, owing to the steady growth of the numbers of the clients, they became more numerous still.⁴ We come across a statement in the history of the first expedition to Khurasan, according to which the Muslim army that crossed the Oxus and besieged Saghanijun, counted 5,000 strong, of which one-fifth were Persians who had accepted Islam and had made common cause with the Arabs.⁵ **Abu Mikhnif** states that in the camp at **Dair Jamajim** along with 100,000 Arab military pensioners (*muqatila*) there were as many **Mawali**.⁶ Certain it is, as Von Kremer points out, that the majority of the converts in Syria, Egypt, Africa, as well as Iraq, Persia and Transoxiana chose military service and entered the army. To this class belonged **Tariq** whose name Gibraltar still bears, and **Musa ibn Nusair**, conqueror of the Maghrib and Spain. Though conspicuous in every walk of life, in learning, in trade and in war, the **Mawali** were refused political rights and social privileges which they as Muslims should have enjoyed. Though Muslims they were not only not

¹ Khuda Bukhsh, *Islamic Civilisation and the authorities therein cited*, p. 27.

² Ibn Qutaibah, p. 121. He died A.H. 100.

³ Zydan, p. 54.

⁴ Ibid, p. 114.

⁵ Beladhuri, 407. Apud Von Kremer, *Culturgeschichte des orientis*, Vol. I, p. 232.

⁶ Wellhausen, *Das Arabische Reich und Sein Sturz*, p. 153.

exempted from the hateful capitation-tax paid originally by non-Muslims, but were exposed to the ever-increasing exactions of government officials. The Omayyads might justify their conduct against the Shi'ites and the Kharjites who were ever and anon trying to undermine the basis of their rule, but no such justification could be pleaded or urged against the peaceful Mawali. We read in the Iqd of Ibn Abd Rabbih the following passage which is evidently taken from the work of Jahidh on clients: Nafi ibn Jubair allowed a client to lead the prayer; for it he was reproached but he replied: "I only wished to demean myself before God by performing my prayer behind a client." This Nafi used to ask whenever a funeral passed by his house as to who the dead person was. If the answer was he was of the Quraish he called out: "Oh what a loss to his tribe." If the dead person was only an Arab, he said: "Oh what a loss to his home!" If the dead person happened to be a client he said: "One of the herd of God who takes whatever he wishes and leaves whatever he wills." People used to say: Three things, if they happen to pass before the person praying, cancel the prayer; these are a donkey, a dog, and a client. Further, clients were never addressed by kunyas (i.e., father of so and so) but simply by their names or nicknames. Nor would Arabs walk in their midst nor let them go ahead of them in festive processions. If they came to dinner, they had to sit behind the Arabs. If a client was entertained on account of his age or his piety or his learning, he had to sit apart so that no one could mistake him for a genuine Arab. Moreover, a client was not allowed to perform the funeral prayer over a deceased Muslim if an Arab was present, however distinguished the client might be. If anybody wanted to marry the daughter of a client he had to make the proposal not to the father or the mother of the girl but to the patron of the client; and the patron either gave or withheld his consent as he pleased. If, on the contrary, the father or the mother of the girl gave her in marriage, it was considered absolutely null and void even if the marriage had been consummated. The status thus created was looked upon merely as that of concubinage and not of lawful wedlock. The Mawali, moreover, were excluded from all important religious posts such as the judgeship, the maxim being that only Arabs were qualified to be judges. The office of Caliph was, further, closed to the son of a slave girl even though his father was a Quraishite. In 101 A.H., for the first time, the son of a slave girl, Yazid son of Al-Walid, ascended the throne. The Omayyads forbade marriages between clients and Arab women, and the famous Abdullah Ibn 'Aun, being a client, was beaten with scourges by Bilal ibn Abi Burdah for marrying an Arab woman. There is a long poem of Abu Bujail condemning a member of the tribe of Abd Qais in Bahrain for marrying his daughter to a client. The whole tribe is reproached for allying itself with tradesmen and cultivators.¹ It is obvious how little inclined the aristocratic Arabs were to allow absolute equality to recent converts. The genuine Arab considered himself infinitely higher and nobler than either the recent Persian or Syrian convert.² Here was a situation full of danger. But it was not only the Mawali whom the Omayyads had to face and overcome; the Arabs themselves were little disposed favourably towards them. Besides the contempt in which they were held, the Mawali had other serious grievances against their rulers. When they served in the army they fought on foot and not on horseback; and when they distinguished themselves they were

¹ Zydari, p. 118.

² My translation of *Culturgeschichtliche Streifzüge*, pp. 79-80.

regarded with distrust. They got pay and a share in the booty (even this excited the wrath of the Arabs) but no regular annuities; nor were they enrolled in the army pension register. Nothing, says the historian **Tabari**, in speaking of the revolt of **Mukhtar**, so exasperated the [Arabs] **Kufans** as to see **Mukhtar** assign to the clients their share of the spoil. "You have taken from us our clients," they cried, "who are the spoil which God hath destined for us with all this province. We have liberated them, hoping for a reward from God, but you do not trouble yourself about this, and cause them to share in our booty." Although admitted to the Arab tribes they were distinguished as 'people of villages' from the 'people of the tribe,' and although Muslims, they were not exempt from taxes payable by subject races. The tax to which the land-owning Arabs themselves had to contribute seems not to have been felt as such a burden by the **Khurasanians** as by the **Transoxanians** who had only joined Islam in anticipation of being exempted from this tax. But the discontent of the inhabitants of **Soghd**, without doubt, spread to those of **Khurasan**. **Harith. b. Suraij** and others took care that this should be the case. Had the Arabs treated the converted Iranians as equals, the amalgamation of the two nationalities might have been possible; as it was, however, they cherished them as enemies in their own bosoms. Islam did not remove but aggravated the antagonism. It regenerated the Iranians, stiffened their backs, and placed in their hands a weapon which they could direct against their masters. Islam united them with those Arabs who, led by theocratic principles, opposed the **Omayyad** government. It was the Arabs who first excited and organized the **Mawali**. The revolutionary Islam opposed the ideas of the theocracy as against the existing system of government and sounded the war-cry in the name of God against the **Omayyads** and their officials, in the name of right and justice against injustice and oppression.¹ Broadly speaking, says Prof. Browne, the policy of the **Omayyads** utterly alienated four classes of their subjects:—

(1) The pious Muslims, who saw with horror and detestation the sacrilegious actions, the ungodly lives, the profanity and the worldliness of their rulers. Amongst these were included nearly all the "companions" (**Ashab**) and the "Helpers" (**Ansars**), and their descendants. From these elements the rebellion of **Zubair** derived most of its strength.

(2) The "Faction" (**Shia**) of **Ali**, which had suffered from the House of **Omayya**, the irreparable wrongs, culminating in the tragedy of **Kerbala**. This constituted the kernel of '**Al-Mukhtar's** rebellion.

(3) The **Kharijites** or puritan theocrats who, reinforced by malcontents and freebooters of every kind, continued till about A.D. 700 to cause continual trouble of the most serious kind to the **Omayyad** government.

(4) The clients (**Mawali**) or non-Arab Muslims who, far from being treated by the government as equal to their co-religionists of Arab birth, were regarded as subject races to be oppressed, exploited and dispised by their rulers.²

The pietist party, the **Kharijites** and the **Murji'ites**, rejected, on principle, every distinction between Arabs and **Mawali** in Islam; and it is not, therefore, surprising that the **Mawali** alternately cast in their lot with these and were found, in large numbers, in every insurrection and rebellion that was organised against the government. The **Shi'ite** party was

¹ Wellhausen *Das Arabische Reich und Sein Sturz*, pp. 309-310.

² *Literary History of Persia*, pp. 232-3.

largely recruited out of their midst, and in Merv the masses of Shia consisted of **Mavali**. With the help and assistance and sympathy of the Arabs who stood opposed to the ruling dynasty, the **Mavali** lifted their heads; and in these **Mavali** who were entitled by virtue of Islam to more than the dominant Arabism allowed them, the hope now dawned of freeing themselves from clientship and of rising to full and direct participation in the Muslim state.¹ The despised **Mavali**, therefore, fondly joined the party which conceded to them their legitimate rights and privileges. Even as early as the time of Muawiah, there was a **Kharijite Mavali** insurrection headed by Abu Ali of Kufa, a **Mawla of Banu Harith**.² In the rebellions of **Al-Mukhtar** and **Abdur-Rahman ibn Ashath** there were **Mavali** in large numbers; but Wellhausen in his masterly and erudite '*Das Arabische Reich und Sein Sturz*', has conclusively shown that neither of them, as suggested by Von Kremer, was essentially a **Mavali** movement. It is equally certain, says he, that the insurrection of **Ibn Asath**, like that of **Mukhtar**, had its real centre in Kufa.³ That the **Mavali** took part in it does not necessarily make it a **Mavali** movement. They might well have had their own interest for hostility against the Syrian Government which constituted the backbone of the Arabism, but they only played a secondary rôle. In it specially well represented were the **Yamanides of Kufah**, the **Kinda Hamdan** and the **Madhi**. In Kufa they were predominant and reckoned **Ibn Ashath** as their own. They were joined by the rest of the tribes, not excluding those of **Basorah**. The insurrection of **Ibn Ashath** was rather a renewed and desperately violent attempt of the Iraqians to shake off the Syrian yoke. It was not a war of the **Mavali** against the Arabs but rather of the Iraqians against the Syrian Arabs. It was a war of the two rival provinces of the Arab Empire ever striving for supremacy.

Even the **Murji'ites**, the passive resisters, content, as Wellhausen puts it, 'to stand up for the Impersonal Law,' turned their principle of toleration against their rulers. Thus **Harith-b-Suraj** and other Arabian **Murji'ites**, joined the oppressed **Mavali** of **Khurasan** to whom the government denied those rights which they had acquired by conversion. Enough, we trust, has been said to show that the **Mavali** had abundant reasons to be distrustful of, and disloyal to, the Omayyad government. Things were hurrying to a crisis, and the general belief that some revolution would take place towards the end of the A.H. 100, hastened and precipitated the crisis already near at hand. The Omayyad governors of Iraq—**Ziad** and **Hajjaj**—had driven away the dangerous elements of **Kufah** and **Basorah** to **Khurasan** which, in process of time, became the centre of discontent and the nursery of rebellions. The **Mavali**, here, were far more compact, and the Arabs, compared to them, far weaker. Moreover, here in **Khurasan**, the fusion of the Arabs and Persians was far greater, and, as its result, the sympathy between the two races far more real than elsewhere. "The Arabs in **Khurasan** were already to a large extent," says Wellhausen, "Persianised. They had Persian wives, wore trousers, drank wine, and kept the festivals of **Nawrauz** and **Mehrjan**, while the Persian language was understood and even spoken among them." * Thus was the position of affairs when in A.H. 101 (719-20) the Shi'ites sent deputations to the Imam **Mohamed-b-Ali-b. Abdullah b.**

¹ Wellhausen, *Die religiös-politischen oppositionsparteien*, p. 79.

² Goldziher, Vol. II, p. 189.

³ Wellhausen, *Das Arabische Reich*, pp. 153 ; 155.

* Wellhausen, *Das Arabische Reich und Sein Sturz*, p. 307.

Abbas-b. Abdulullah b. Hashim to accept their allegiance. The time was ripe for a change and the Abbasid propaganda could count upon the undivided support of the oppressed and the despised **Mavali** who, as we have seen, espoused the cause of the rebels and insurgents who rose against the government. They had already proved their power and worth in the insurrection of **Al Mukhtar**, in the conquest of **Andalusia** and upon a hundred battle-fields. These **Mavali** hailed with eagerness and delight the movement which assured to them the fall of the **Omayyads** and the dawn of a happier and brighter era.

In all the accounts of the Abbasid movement **Kufa** appears as its home and hearth. Here more than half the population consisted of **Mavali** (clients) who had monopolised handicraft, trade, and commerce. They were mostly Persians in race and language. They had come to **Kufa** as prisoners of war, and had there passed over to Islam; then they were manumitted by their owners and received as clients into the Arab tribes, so that they now occupied an ambiguous position, being no longer slaves but still very dependent on their patrons, needing their protection, bound to their service, and forming their retinue in peace and war. No longer satisfied with their humble position, they were pining for their liberty and political rights. Here, in **Kufa**, resided **Maisara**, **Ibn Mahan**, **Abu Salma**, the representatives and the plenipotentiaries of the concealed Imam, as also their supporters and fellow-workers. All of these were **Mavali**, **Iranians** by nationality, and traders and artisans by profession. Some Arabs, says Prof. Wellhausen, may have belonged to the party, but they did not hold a leading position. **Khurasan** (*i.e.* **Merv**) was worked from **Kufa**; and for a long time after the year 101 A.H. the canvassers there were all foreign merchants, natives of **Kufa**.¹ To the support of the **Mavali** was to be added the support of the **Shi'ites** in order to ensure complete success of the movement. The **Shi'ites** regarded the **Omayyads** as usurpers and were only too anxious to bring back the **Imamat** to the house of **Ali**; and their support to the movement was secured by carrying on the Abbasid propaganda in the name of **Hashim**, the common ancestor of both the Abbasids and the **Alides**, and only at the last, when success was achieved, was it made clear to the bitter disappointment of **Ali's** partisans, that the House of **Abbas** was to profit by their labours to the exclusion of the House of **Ali**.² Thus duped, the **Shi'ites** willingly played into their hands, for they not only execrated the **Omayyad** rule but protested against Arabian Nationalism. Islam and not Arabism, according to their fundamental principles, conferred citizenship in the Muslim theocracy.

We are not concerned with the successive stages of this remarkable propaganda, but we cannot fail to mention here that the black standard of the Abbasids raised by **Abu Muslim** at the village of **Siqandanj** near **Merv** bore the significant inscription from the **Qur'an**: "Permission [to fight] is accorded to those who take up arms because they have been unjustly treated."³ This was a stroke of policy, most probably adopted with a view to gratify the **Mavali** who had been smarting under the lashes of the **Omayyad** tyranny and oppression. But **Abu Muslim** proceeded with caution and it was not until he had secured the help of the **Yamanide** Arabs that he proceeded to capture and occupy the capital of **Khurasan**. For

¹ Wellhausen, p. 320. Prof. Wellhausen considers **Khidash** to be the real founder of the Abbasid party in **Merv**.

² Browne, *Lit. Hist. of Persia*, p. 239.

³ Browne, *Vol. I*, p. 242.

seven months did he wait in the neighbourhood of Merv without attempting any serious advance. The Abbasid propaganda was one triumphal procession leading up to the accession of Abdullah-al-Saffah, October 30, A.D. 749. Kufah was occupied by Kahtabah in August, 749 A.D.; in the same month Merwan's son was routed on the lesser Zab by Ibn Awn, and Merwan himself suffered a crushing defeat on the river Zab on January 26, 750 A.D. Damascus was taken three months later and Merwan II, the last Caliph of the House of Omayyad, was slain on Aug. 5th of the same year. The war against Arabism, says Prof. Wellhausen, resulted in the supremacy of the Iranians and the subjection of the Arabs as a nation¹ Nasr-b-Sayar—the only man of loyalty and devotion to the Omayyad cause—clearly anticipated that, but his warnings fell on unwilling ears. Thus did he address the Arabs in the verses preserved by Dinaweri² :—

“Tell those of Rabi'a in Merv and her brethren to rise in wrath ere wrath shall avail nothing,
And to declare war; for verily the people have raised a war in the skirts of which the wood is ablaze!
What ails you that ye stir up strife amongst yourselves, as though men of sense were absent among you,
And neglect an enemy who already overshadows you, a heterogeneous horde, devoid alike of religion and nobility?
They are no Arabs of ours that we should know them, nor even decent clients if their pedigree be declared,
But a people who hold a faith whereof I never heard from the Prophet and which the scriptures never brought.
And should one question me as to the essence of their religion, verily their religion is that the Arabs should be slain!”

With Merwan II passed away the House of Omayyad and the Arab Imperialism. We have seen how the Omayyads offended almost all classes of their subjects; the pietists by their ungodliness, the Mavali by their arrogance and contempt, the Arabs as a body by taking away power from them and confining it in the narrow circle of their kinsmen and favourites. Had they secured the loyalty and devotion of the Mavali they would have founded their Empire upon a sure and permanent basis. The Mavali and the Syrians combined together would have given them strength enough to cope with any difficulty or put down any insurrection. But as matters stood the oppressed Mavali threw in their weight, whenever an occasion arose, against the government. The entire fabric of the Omayyad rule was shattered by incessant insurrections, deep-seated disaffection and growing disloyalty, and the Abbasid propaganda was but one unopposed and continuous triumph. With the House of Abbas the Arabs retire to the background, and the Iranians come to the forefront.

The political tendencies of the Abbasids were decidedly Iraqi and anti-Syrian.³ At the same time the sovereignty of the Arabs, whose representatives were the Omayyads and the Syrians, had ended. The old home and hearth of the Arabs had become such a complete waste that pilgrimages could no longer be undertaken with safety. The Arab tribes, ceasing to be the framework of Muslim theocracy, had completely lost their privileges. The Mavali were emancipated, and the distinction between Arabs and non-Arabs was effaced. Displaced from its original, exclusive position founded upon military rights, Arabism was now relegated to a

¹ Das Arabische Reich, p. 334.

² Ibid, p. 322. Prof. Browne's excellent translation, p. 242.

³ Wellhausen, Das Arabische Reich und Sein Sturz, pp. 347-352.

peaceful and civic sphere and became an international civilisation in which all Muslims participated. The basis of this civilisation was religion, but the Arab religion, no longer confined to the Arab nation, had extended far and wide. The Arabic language, however, remained the language of Islam and absorbed the languages of the most important Christian nations of Asia Minor and Africa. In Iran it appears even to have been adopted for literary and learned purposes, but poetry preserved the native idiom and brought it afresh to a place of honour. Even the **Mawali** obtained not a complete but a partial preponderance over the Arabs. The **Khurasanians** had helped the **Abbasids** to victory and had shared the booty with them. They were, in a certain sense, the heirs and inheritors of the Syrians even though their relation to the government was different to that of the Syrians. They styled themselves the **Shia** (the party), the **Ansar** (helpers), or the **Abna** (sons) of the **Dawla**. In their hands lay the outward power. They were militarily organised. They held the posts of commanders and their officers (**Quvad**) were privileged to play the great lords. They formed the standing army of the Caliph, and to him they were attached as his bodyguards. Baghdad was not laid out as a world-city but as the camp of the **Khurasanians** where the Caliph, far from **Kufah**, desired to reside. But while in camp the **Khurasanians** kept up connection with their home, and the preponderance which they had gained as a party and as an army in the service of the **Abbasids** made itself felt among their people and in their country, in the Eastern Iran. Under the mask of International Islam Iranism triumphed over the Arabs. With the change of dynasty even the system of government changed. It is doubtful whether Persian influence chiefly brought this about, but certain it is that it became essentially **unArab**. By conquest the Arabs stood as a ruling nobility; the geneo-logical network of their tribal system superficially spread over the provinces of their empire. This primitive system, in its main features, continued under the **Omayyads**. It soon became impracticable however. It disappeared under the **Abbasids**, with the distinction of rank and position which the **Abbasid** government presupposed. Not like the **Omayyads**, the **Abbasids** rose upon a broad aristocracy to which they themselves belonged. The **Khurasanians**, on whom they relied, were not their kith and kin but only their instruments. For them the **Muslims**, as a whole, were all alike without any gradation of political rights and privileges. They alone, as the heirs of the prophet, had the right to rule and to govern. There was nothing, therefore, to prevent them from constituting their government according to technical rules just as it suited their purpose or personal interests. They brought greater order in administration, notably in their judicial and financial systems, and showed great earnestness in removing the grievances of those who approached them as the supreme appellate tribunal. But in a much stronger manner than the **Omayyads** did they suppress all general and lively interest in politics which earlier formed part of religion. **Muslims**, **Arabs** and non-**Arabs**, were mere subjects and were allowed no longer to interest themselves in public affairs. They were relegated to trade, agriculture or the peaceful cultivation of letters, and could only conspire in secret at the most. The Court was the summit of the State. The Caliph was surrounded by a motley crowd of attendants of both sexes as also by the very numerous family members, the **Hashimides**. To the Court belonged the army, the cream and flower of which was permanently quartered at the residence of the Caliph. In this Baghdad differed not only from Medina but also from Damascus. To the Court, moreover, belonged a crowd of civil servants who were no

longer identical with military officers. They were, for the most part, creatures and favourites of the ruler. Among them there was a majority of freedmen who formerly exercised a private influence but now succeeded to the highest public posts. From the dust were they raised and to the dust were they thrown back. Catastrophies and intrigues became the order of the day at the Court. Distinguished men, though non-officials, were unwillingly drawn to the Court, and in choosing their wives the Abbasids no longer attached any weight to their descent. Not birth but the Caliph created the circle of the nobility. By uniforms and (Tiraz) he conferred rank and dignity—the tailors and the lacemakers had plenty to do. In the place of an aristocracy there stepped forward a court bureaucracy, graduated and controlled by each other. At the head stood the Wazir who presided over the chancery, and in later times became the ostensible alter ego of the invisible Caliph who only occasionally appeared as an actor on the stage or shimmered like a lightning and disappeared. More and more did the practice gain ground for the governor-elect to make over his province to his representative and to remain himself at the Court; specially so if he had the privilege of being a prince of the royal blood. The subordinate officers of the chancery were mostly Christians and Jews who easily drew upon themselves the hatred and envy of the Muslim mob. Besides the Wazir the most conspicuous person in the official circle was the executioner. The Arabs knew no executioner and the Omayyads kept no such person. From the Abbasids, however, this office was inseparable. A piece of leather near the throne, which served as a scaffold, formed one of the insignia of the caliphate; instantaneous execution coupled with the most deliberate cruelties heightened the awe and reverence for the majesty of the Caliph. For this Iran served as a model whose Shah exercised the right of life and death over his subjects. From Iran also came the office of the court astrologer who was questioned about every important undertaking, and even accompanied the army in the field. Finally are the postmasters to be mentioned, as quite characteristic of the Abbasid government, who were the feelers of the Court of Baghdad extending over the provinces, and the select confidants who had secretly to watch even the governors.¹ The post served as a means of espionage; the news service in the extensive empire was splendidly organised. Tabari mentions not merely the events but also the arrival of the information at the Court. The new era is essentially distinguished from the old by its relation to religion. The Abbasids claimed the credit of having brought Islam to power which had been suppressed by the Omayyads. They wanted to revive, as they said, the faded traditions of the Prophet. To Baghdad they invited from Medina—their seat hitherto—men versed in the sacred laws—and constantly secured their good-will; for they had to decide political questions in a juristic form, according to the Qur'an and the Sunnah. They used Islam in truth for their own purposes.

They tamed the divines and the theologians at their Court and made them justify their most odious measures. The pious opposition in gaining the victory over the Omayyads had reached its goal and was thus rendered harmless and now could rest quiet. Politics was in good hands; the Muslims had no longer to worry themselves about it. The theocracy was realized and revolutions against the government must, therefore, cease. The Abbasids, moreover, after unceasing wars and insurrections, were

¹ Von Kremer, *Culturgeschichte des orientes*, Vol. I, pp. 192 *et seq.*

favoured by the necessity for peace. The Arabs had become exhausted and had been bled to death. We might think that the Abbasids would have favoured the Shi'a party with whom they were allied; but they turned against them when they succeeded to government and even became hostile to them in order to repel their claims to the caliphate. An extreme Shi'ite sect, the **Ravendites** (specially to be found in Iran), they did not even hesitate to cast aside. In religion they turned from the Persians to the Arabs. They ceased to acknowledge their extraneous origin as soon as they had firmly planted themselves and had secured power. They conformed to the current Islam of the **Jama'a** which was of an unreflective character, treated religion as a matter of custom, and were satisfied with tradition which regulated in a uniform manner the life of every one by ritual and law.

They stood up far more vigorously for the **Ijma'** of the community and persecuted far more fiercely than the **Omayyads** any departure or innovation which imperilled religious or political unity. As heirs of the Prophet they made greater use of the **Imamat** than the **Omayyads** and wielded the temporal and spiritual powers of the government. While the **Omayyads** relied upon nationality, the Abbasids founded their empire upon the army and the religion. We might characterise their caliphate as **Cæsaro-Papacy**. They appointed an officer who attended to heresies and instituted an inquisition against the so-called **Zindiq** who appear to have been the precursors of the extreme Persian Shi'ites. Even the **Khurasanians**, later on, became inconvenient to the Abbasids. **Mansur** got rid of the guardianship of **Abu Muslim** when he required him no more. He was by no means a match for **Abu Muslim** in his great qualities, but he managed to overreach him and got him murdered. At first the **Khurasanians** were indispensable for military purposes and later it was not easy to ignore or do without them. After **Harun's** death an attempt was made to get rid of them with a view to consolidate and strengthen the government. The Abbasids did not succeed, however, in making themselves independent by the wholesale purchase of **Berbers**, **Slavs**, **Soghdanians** and **Turks** whom they organised and equipped in order to play them off against the **Khurasanians**. In the result they failed. They fell indeed under the tyranny of these **mamluks**, chiefly the **Turks**. They finally became powerless and their empire fell to pieces. The **Iranians** maintained their commanding position for a couple of centuries, but they were unable to maintain it permanently in their own country. They could not check the incursions of the **Turks** in **Transoxiana**, **Tukharistan**, and **Khurasan**, though for a time these were kept back by the Arabs. And thus, in the end, the **Turks** became the inheritors of the **Islamic Empire** in which, as **mamluks**, they had already secured a position. To them we might even add the **Mongols** who did not feel quite at home in Islam, but who, like a devastating storm, passed over it, leaving behind, in the main, no other than negative traces.

We have thought it necessary to indicate the changes which the overthrow of the **Omayyads** involved, and to describe the policy which the Abbasids pursued. The Abbasids, by destroying the bulwark of Arab nationality, paved the way for foreign influences which ultimately denationalized the government and demoralized the Arabs. The introduction of unbounded luxuries and the most corrupt forms of vices at the Court and among the people, sapped the national vigour and vitality and made the government entirely dependent upon foreign mercenaries who slowly, yet steadily, succeeded in crippling the powers of the government and in reducing the Caliph to a shadow and a phantom. The racial problem,

says Lord Curzon, must always remain an anxious one since when excited it is capable of transcending all others in explosive energy and importance. This very racial problem the Omayyads were called upon to grapple with and settle, but in dealing with this problem they shipwrecked their empire. Instead of a policy of conciliation they pursued a policy of suppression and repression, and instead of tact and sympathy they showed national venom and aggressiveness. In the Omayyad days the Shu'ubiyah party was unable to gain the upper hand, owing, as we have seen, to the harsh and severe policy of the rulers; but when the caliphate came into the hands of the Abbasids and when the Arab prestige was destroyed by the result of the war between Amin and Mamun, they immediately came to the front and composed works sorely attacking the vanity of the Arabs.

IV.

We have noticed the changes that came over the Muslim Empire with the ascendancy of the House of Abbas. Persian influence, as Von Kremer truly says, increased at the Court of the Caliphs and reached its zenith under Al-Hadi, Harun-ur-Rashid and Al-Mamun. Most of the ministers of the last were Persians or of Persian extraction. In Baghdad Persian fashions continued to enjoy an increasing ascendancy. The old Persian festivals of the Nawruz, Mīhrjan and Ram were celebrated. Persian raiment was the official Court dress, and the tall, black, conical Persian hats were already prescribed as official by the second Abbasid Caliph (in A.H. 153 = A.D. 770). At the Court the customs of the Sasanian kings were imitated and garments decorated with golden inscriptions were introduced which it was the exclusive privilege of the ruler to bestow. A coin of the Caliph Mutawakkil shows us this prince actually clothed in true Persian fashion.¹ While under the Omayyads Ismail-b-Yasar found it dangerous to boast of his Persian descent, being thrown unto a tank of water by the order of the Caliph Hisham for doing so; under the Abbasids the Persians showed an open contempt for the Arabs and all that was Arabian. In this the Persians were undoubtedly encouraged by the Caliphs, for we have it that Mamun openly avowed his partiality towards the Persians at the expense of the Arabs; and when reproached for it by an Arab for showing greater favours to the inhabitants of Khurasan than the Arabs, the Caliph observed: "Never have I caused a Qaisite Arab to alight from his horse without his consuming my treasury to the last Dirham; the South Arabians again I do not like, nor do they like me; the Qud'a Arabs again await the advent of the Sufyani² in order to join him; the Rabia Arabs are angry with God for not selecting a prophet out of their midst; and we never meet two of them without one being a rebel."

In the golden period of the Abbasid dynasty among the many Wazirs we scarcely find one of Arab descent. They were mostly Mavali and Persians; for instance the Wazir of the second Abbasid Caliph, Rabia-b-Yunus, was a descendant of a certain Kysan, the client of Othman or, according to other reports, a foundling. Already under the Caliph Abu Jafar Al-Man-sur, says Goldziher, we are witnesses of how the Arab waits vainly for entrance before the Caliph's gate, while men of Khurasan freely go in and out through it and mock the rude Arabs. The Poet Abu Tamman (died A.D. 845-6) was rebuked by the Wazir for comparing the Caliph to Hatim of the tribe of Tayy and other personages in whom the Arabs gloried, with

¹ Streifzüge, pp. 32, 33; my translation, p. 93.

² The Mahdi of the followers of the Omayyad dynasty.

the words : " Dost thou compare the Commander of the Faithful with these barbarous Arabs."

Irano-Philism was indeed traditional with the House of Abbas ; and I fancy, says Goldziher, that in one of the most remarkable traditions in Bukhari the conviction of the damaging results of this tendency of the Abbasids is intended to be expressed. Whoever is acquainted with the style of traditions, and does not allow himself to be blinded by the brilliance of the Isnad, will easily see that the theologians in the beginning of the third century of the Hejira probably intended to convey this [conviction of theirs] by making Omar, struck by the dagger of Abu Lulu say to Abdullah the son of Abbas, the ancestor of the Abbasids : " Praise be to God that my death has not been caused by a Muslim. Thou and thy father would like to see Medina full of barbarians (uluj)." This fiction is nothing more than a criticism of the circumstances appearing to light during the Abbasid rule associated with the person of the ancestor of the dynasty.¹

Rich and influential Persian families sought to revive their ancient religious beliefs and practices, and in Afshin we have a most conspicuous example of the thin veneer of Islam in non-Arab circles. Though he rendered brilliant services to Islam he still held by his own ancestral beliefs and dreamed of the restoration of the Persian Empire and of the ' white religion' and ridiculed the Arabs, the Maghribines and the Muslim Turks. He likened the Arabs to dogs to whom we throw a bone in order to strike them on the head with a club. Since the caliphate of Al-Mutawakkil the influence of the Turks became decisive on the government at Baghdad. They held the most important civil and military posts, and under Al-Musta'in things came to such a pass that the Caliph allowed them a free hand in the disposal of the State Treasury. Very great must have been the indignation among the Arabs against the preponderance of the foreign elements, and an echo of the popular feeling we hear, as it were, in a poem declaimed with applause and approval at the Court of the Caliph Al-Muntasir (247-248).

Oh ! Lady of the house in Al Burk !—Oh ! Lady of government and power !
Be afraid of God and do not kill us ! for we are neither Dailam nor Turks. ²

Al-Mutanabbi (fourth century of the A.H.) felt for the decay and corruption of his nation, and has written, so to speak, an epitaph over the Arab greatness which is unsurpassed in its beauty and in its pathos :—

Men retain their worth through their ruler ;
No salvation is there for the Arabs whom the barbarians rule
Who possess neither culture nor renown, neither alliance nor loyalty.
Wheresoever thou mayst set thy foot, wilt thou find men watched over by
slaves as if they were a herd of cattle.³

The increase of foreign elements, says Goldziher (in the government) corresponded with the decline of Arabism.

V.

Such a social and political atmosphere could not but add strength to those tendencies which the Shu'ubiyites represented. The Shu'ubiyites

¹ Goldziher, *Muh. Studien*, Vol. I, p. 149 ; compare Ibn Sa'd, *Tabaqat*, Vol. III, part I, p. 253.

² Goldziher, I, p. 151. The reference which Goldziher gives is evidently wrong. It is not to be found in Aghani, ix.

O Herrin des Hauses in Al-Burk—O Herrin der Herrschaft und der macht
Fürchte Gott und tödte uns nicht ! wir sind ja nicht Dejilem und Türken.

³ Ibid, p. 153.

might roughly be divided into two classes, the moderates and the extremists. While the former urged the doctrine of the complete equality of the *Ajam* with the *Arab*; the latter boldly advocated the superiority of the Persians and the inferiority of the Arabs, and hence in the remains of the controversial literature that has survived the overwhelming tide of orthodoxy which set in in the fifth and sixth centuries of the *Hejira*, we find a fierceness of tone and temper against the Arabs and an unrestrained apotheosis of the Persian race and nationality. We do not suggest that the Persians alone took part in this, but as Professor Browne says: of these *Shu'ubiyah* each one vaunted particularly the claims to distinction of his own nationality, whether Syrian, Nabathæan, Egyptian, Greek, Spanish or Persian; but the last named were at once the most vehement and the most numerous.¹

At the time of the Abbasids learned men, poets and scholars (of Persian origin) opposed their Iranian racial pride against the Arabs. The Persian aristocracy of this period, moreover, preserved their genealogies with as much care and zeal as did the descendants of *Kahtan* and *Adnan*, and even in the genealogy of the Arabs were they better instructed than the Arabs themselves. They could, therefore, pick holes in their pedigree with all the greater ease and attack them with all the greater effect. It is reported of the famous grammarian *Yunus-b-Habib* (died 185), (whom even the Arabs of the desert visited to profit by his philological studies) that he referred with pride to his Persian descent. The orator and theologian, *Mohammed-b-Al-Laith* (a *Mawla* of the Omayyad family who traced back his pedigree to *Dara-b-Dara*) openly showed partiality to the Persians at the time of the *Bermicides*. It was probably on this account that the Orthodox called him a '*Zindiq*' though he wrote a book in refutation of this heresy. *Sahl-b-Harun*, one of the librarians of *Mamun*, wrote a large number of books ventilating his hatred against the Arabs. This was the time when poets (of the Persian race) writing in the noble language of the *Quraishites*, could enter their protest against the self-glorification of the Arabs. At their head stands the *Shu'ubiyite* poet *Bashar-ibn-Burd* whose boastful poems celebrating his descent from the '*Quraish of the Persians*' and biting satires against the Arabs have come down to us. Almost two centuries later, we have *Abu Sa'id-ur Rustami* (tenth century A.D.) in whom the national cry of the Persians against the Arabs sounds its last notes.² To this class of poets belongs *Ishaq-b-Hassan ul-Khurrami* (died 200 A.H.) He refers with pride to the fact that he has come from *Soghd* and exultingly says that it matters not to him that he does not reckon among his ancestors *Yuhabir* or *Jarm* or '*Ukl*'. The poet and philologist *Abu Othman Sa'id-b-Humaid-b-Bukhtigan* (died 240) appears to have been the representative of the extreme wing of the *Shu'ubiyite* poets. His father—a distinguished upholder of the *Mutazali* doctrine—had given suspicion of *Shu'ubiyism*, but the son offered the clearest proof of it. He composed some verses ridiculing *Ahmad ibn Al-Da'ud*, the chief *Kazi* of *Mutasim* and *Wathiq*, at whose instance his father had been imprisoned:—

Thou tracest thy descent from *Iyad* simply because thy father happens (by chance) to be called *Abu Da'ud*.

If by chance he had been called *Amr-b-Madi* thou wouldst have said thou wert descended from *Zubaid* or *Murad*.³

In the poet *Dik-ul-Jinn* (died 235-6), a *Shu'ubiyite* enthusiast, the Syrian patriotism appears to have found a special advocate. The Arabs, he says,

¹ Prof. Browne, *Lit. Hist. of Persia*, p. 286.

² Goldziher, pp. 161 *et seq.*

³ Aghani, xvii. p. 2.

have no precedence over us, for descent from Abraham unites us all. We are as much Muslims as they are, and if one of them kills us he is liable to capital punishment. Has God announced anywhere that they have superiority over us. The much despised Nabathæans as well found their supporters in philosophers. The philosophers **Dirar-b-Amr ul-Ghatafani** and **Thumama-b-Al Ashras** (died 213) espoused their cause and urged that the Nabathæans could hold their own as against the Arabs in honour and glory. **Mas'udi**—to whom we owe this information—adds that even the brilliant litterateur and philosopher **Al-Jahidh** professed the doctrines of the **Dirarites** who advocated the excellence of the Nabathæans over the Arabs. But the book called the “Nabathæan Agriculture” (3rd century of the A.H.) must be regarded as the most conspicuous document of the Nabathæan *Shu'ubiyah*. Its author—**Ibn Wahshiyyah**¹—inspired by a fierce hatred against the Arabs, and full of bitterness for the contempt entertained by these against his compatriots, decided to translate and make accessible (to the people) the remains of the old Babylonian literature with a view to show that the forerunners of his people—so deeply despised by the Arabs—possessed a high culture and civilisation, and surpassed, by their knowledge, many nations of antiquity. The author intended to contrast the insignificance of the old Arabs in science and culture with the performances in this direction of his own people and thereby to meet the unfounded conceit of the ruling race.

Just as in the Aramaic circle, Nabathæan *Shu'ubiyah* literature grew up, so also ‘Books of the Copts’ arose celebrating the great deeds of the old Egyptians. Thus throughout the Muslim Empire, embracing as it did many races and nationalities united by the one tie of religion, the idea of nationality got better of religion and eventually triumphed. This indeed was but consistent with the slow but sure progress of humanity. Religion cannot annihilate the distinction of races, and though Islam, in its beginning, destroyed the barriers of race and colour and united its followers under the common banner of faith, it hopelessly failed to maintain its ideal; and hence the intensity of national pride and national tradition, of which the *Shu'ubiyite* literature bears more than ample proof.

Among the most notable champions of Arab superiority we might mention the historians **Ibn Qutaibah** (died A.D. 883 or 889), and **Al-Beladhuri** (died A.D. 892), and **Nasir-i-Khusraw**—all curiously enough of Persian origin.

The *Shu'ubiyah* controversy, say Prof. Browne, extended itself to the regions of geneology and philology wherein lay the special pride of the Arabs; and as regards philology proper Goldziher specially mentions as champions of the Arab cause the great commentator **Al-Zamakhshari** [also a Persian, died 1143-4 A.D.] who in his preface to the *mufasssil* thanks God for his learning in, and enthusiasm for, the Arabic language and his exemption from *Shu'ubi* tendencies; **Ibn Duraid** (died A.D. 933); and **Abul Hassain-b-Faris** (early eleventh century). Amongst their most notable opponents he reckons **Hamza** of Isfahan who “was enthusiastic for the Persians and who shows his enthusiasm, amongst other ways, by finding Persian etymologies for names generally regarded as purely Arabic.”²

We can fix the second and third centuries of the *Hejira* as the

¹ The book of “Nabathæan Agriculture” composed in 904 A.D. by **Ibn Wahshiyyah** who professed to have translated it from the Chaldaean is now known to be a forgery.—Prof. Nicholson, *Lit. Hist. of the Arabs*, p. xxv.

² *Lit. Hist. of Persia*, Vol. I, pp. 269, 270.

golden period of this party, and we find, as it were, an echo of this movement in Al-Biruni who lived in the fourth century of the A.H., wrote in Arabic and championed the cause of the Persian race against the idle boasts of the friends of the Arabs, particularly Ibn Qutaibah.

VI.

It now remains for us to consider the nature of the arguments used by the Shu'ubi and the Arabs in support of their respective contention. In the Iqd of Ibn Abd Rabbi we have a most admirable summary of the arguments advanced by each of these parties, and as these passages are full of interest, I propose to translate them *in extenso*.¹

The contention of the Shu'ubiyah or the Equalitarians who hold to the doctrine of Equality.

Of the arguments advanced by the Shu'ubiyah against the Arabs.

We hold, they say, to the principle of brotherhood and equality, and believe that all men are of the same substance, and children of one and the same man. We adduce as proof of our contention the sayings of the prophet: "The blood of the believers shall be equally retaliated or expiated (*i.e.*, the noble shall have no advantage over the ignoble in the retaliation or expiation of blood); and if the least of them should give a promise of security to any people, the whole body of the Muslims shall be responsible for its fulfilment; and they shall be one body, and a help to each other against all others." And also his saying in his speech at the farewell pilgrimage, in which address he took leave of his followers, and put the seal on his mission (or brought it to an end):—"Ye people! God has removed from you the pride of the days of ignorance, and the boasting of one's ancestors. Ye are all children of Adam, and Adam is from dust. No Arab has superiority over any of the 'Ajam, except by reason of piety." These words of the Prophet are in conformity with the words of God: "Truly, the most worthy of honour in the sight of God is he who feareth Him most." You, however, do not consent to aught save boasting, and say: "They shall never be equal to us, although they professed Islam before us, and although they shall pray until they become like unto bows, and fast until they become like unto strings." But we shall act in a gentle manner towards you, and consent to discuss with you the question of the nobility of birth which your Prophet has prohibited you to boast of but you have chosen naught save to act contrary to his injunctions. In agreeing to argue with you, we are also following his teaching and his precepts; and thus we shall refute your contention for self-glorification and say, "Let us hear what you have to say should the Ajam put this question to you, Do you consider glory to consist all in sovereignty or the prophetic office?" Should you say, in sovereignty, they might answer you in this wise. The kings of the whole world are of our number such as the Pharaohs, the Nimrods, the Amalekites, the Chosroes, and the Cæsars. Besides, is it meet for anyone ever to have the like of the dominion of Solomon to whom were subjected men and the demons and the birds and the wind. Now, he was one of us. Or has anyone had a kingdom like that of Alexander whose power was established upon the earth, and who reached the rising of the sun and its setting, and

¹ Iqd, Vol. II, pp. 85-90.

who built a rampart of iron with which he filled the space between the mountain sides, and behind which he imprisoned a nation of men who surpassed the rest of the world in numbers for God saith "Until Yajuj and Majuj have had a way opened for them, and they shall hasten from every highland"; nothing can point better to their large numbers than these words. Nor has any man left behind him monuments like his on the face of the earth. If he had left nothing else save the **Pharos** at **Alexandria** the foundations of which he laid on the bottom of the sea, and at the head of which he constructed a mirror which reflected the sea on all sides [it would have been quite sufficient]. Of us, also, are the **Kings of India**, one of whom wrote to **Omar Ibn 'Abdul Aziz** to the effect:—"From the king of kings, who is a descendant of a thousand kings, and has as his wives the daughters of a thousand kings, and in whose stables a thousand elephants are kept, and who has two rivers giving growth to the alas wood and madder and the nut and camphor, the fragrance of which is perceived at a distance of twelve miles—to the king of the Arabs who does not attribute to God any companion whatever. To proceed. My object in writing to you is to pray you to send me some one to teach me the faith of Islam and instruct me in its laws. Peace."

If, on the other hand you say that there is no glory save in the prophetic office, we answer that all prophets and apostles from **Adam** himself have been of our nations, with the exception of four—**Hud Salih, Ismail, and Mohamed**. Of us are the chosen ones of mankind, **Adam** and **Noah**, the two stocks from which all men have branched off. We are therefore the root and you the branches; indeed, you are nothing but one of our offshoots. This being so, you may say what you list and indulge in your pretensions. And besides, there have ever been nations of the **A'ajim** in every part of the world, with kings to unite them and cities to gather them together, and with laws to obey; and a philosophy they have created, and with wonderful things they have invented in the way of instruments and arts, as for instance, the art of manufacturing silk brocade, which is the most wonderful of arts, and the game of chess, which is the noblest of games, and the weight of the steel-yard by means of which a single pound or a hundred pounds can be weighed; and like the philosophy of the Greeks in their cosmogony and their law, and the astrolabe which shows the positions of the stars, and by which a knowledge of altitudes is gained, as well as the movements of heavenly bodies and of the eclipses. As for the **Arabs** they have never had a king to unite the country and outlying districts in one rule, or to curb the wrong-doer and restrain the ignorant; nor have they produced any result in art, nor have they effected anything in philosophy; the only thing they can lay a claim to is poetry, the laurels of which, however, the foreigners share with them, for the Greeks have wonderful poetry, perfect in measure and rhyme. What, then, can the **Arab** boast of as against foreigners (*i.e.*, non-Arabs). They simply are ferocious wolves and savage beasts, devouring and attacking each other, so that their men are ever secured in chains of captivity, and their women taken up behind the saddle-bags of camels, and who, if overtaken by the relief party are rescued in the evening, but after having been trampled upon like a public road. In fact, a certain poet boasted of this, saying: "Nor more trusted than I, by the women carried off on an evening." "And is it a thing to boast of, woe to thee," he was told, 'to rescue them in the evening after they have been outraged and humbled down.' The poet, **Jarir** has said, reproaching

the **Banu Darim** for the victory of the **Qais** over them in the battle of **Rahrahan** :—

And at **Rahrahan** on the morning when **Ma'bad** was taken in fetters were your women wedded [compressed] without dowries.

And **Antarah** has said, addressing his wife :—

Men have a way to thee, shouldst thou be taken. Thou paintest thine eyes with collyrium and tingeest thy finger with henna.

But were I taken, I would be yoked to the string of captives, tied behind the camels.

Thy mount would be the camel and its saddle, but my mount on that day would be the hollow of my foot.

We also read that **Ibn Habulah**, the **Ghassanid**, having taken captive the wife of **Al-Harith ibn Amral-Kindi**, he was overtaken by **Al-Harith**, who slew him and took back his wife after he had had connection with her. **Al-Harith** asked her if he had enjoyed her, and she answered : " Yes, and by God, no woman has ever had a man like him." **Al-Harith**, having tied her between two horses, he made them run at full gallop, and she was torn to pieces. He then said the following verses :—

Every woman, though she should make a show of love to thee, her love is but false.

He who is deceived by woman's love, after **Hind** [his wife], is but an ignorant fool.

And the **Banu Sulaim** carried off **Raihanah**, sister of 'Amr ibn Ma'di-Karib, the horseman of the Arabs, who says in this connection :—

Is it **Raihanah's** cry I hear ? It keeps me awake, while my companions are all asleep.

It is in this poem that he says :—

If you are powerless to do a thing, leave it to do what you can.

Al-Haufazan raided the **Banu Munquidh ibn Zaid-Manat**, and carried off **Az-Zarqa** of the **Banu Rabi' Ibnu-l-Harith**. She found favour in his eyes, and he found favour in hers ; and he lay with her. Then he was overtaken by **Quais ibn 'Asim** who rescued **Az-Zarqa**, and brought her back to her family, after he, too, had lain with her. Now, such were the customs of Arabs and non-Arabs in the time of ignorance. Then God brought about Islam, in which the non-Arabs, too, had a full share ; for the prophet, peace and blessing be upon him, was sent to the red and the black of the sons of Adam ; and the first to follow him were one freeman and one slave. There is a difference of opinion as to who these were ; some say these were **Abu Bakar** and **Bilal**, while others allege they were **'Ali** and **Suhaib**. When **Omar Ibnu-l-Khattab** was stabbed by his murderer, he placed this **Suhaib** at the head of the **Muhajirs** and the **Ansar** to lead them in prayer ; and on **Suhaib** asking him to appoint a successor, he answered, " I do not feel as though I can appoint a successor." **Suhaib** then mentioned the names of the six men of **Hira**, he took exception to every one of them ; and then said, " If **Salim**, the **Mawla** of **Abu Hudhaifah** had been alive, I would not have hesitated about him." Thereupon the Arab poet thus expressed himself.

Here is **Suhaib** ; he led as Imam every one of the **Mahajirs**, and rose high above all the tribes of the **Ansar**.

He [i.e., 'Omar did not approve of any of them to act as our Imam,—and yet they are the guiding spirits and the leaders of all good men.

Nay more, had **Salim**, he of the broken teeth, been now alive, he would have obtained the caliphate of the whole empire !

These barbarians are ever alive and prosperous, but not we. Verily the Arabs are blind and greatly in error.

Bujair holds the Arabs to scorn in the following verses, for their geneological differences and their adoption of men of dubious parentage:—

You say that the Indians are the children of Khindif, and that there exists between you and the Barbars a kinship;
That the Dailams are descended from Basil ibn Dhabbah, and the Burjans are sons of 'Amr ibn 'Amir!
All men thus become sons of one man; and all alike in origin of race!
Surely, the kingly race of the Banu-l-Asfar [i.e., the Greeks] are nobler than you; and worthier of our kinship are the Chosroes.
“Dost thou covet to enter into marriage relationship with me, when thou openly layest claim to false parentage? What protection can one hope for from a bare-faced pretender?”
Thou, in thy vileness, revilest his family and tribe, and foolishly extol Tahir.

I have reproduced these verses in a complete form in the chapter on women, men of dubious births, and the nobly-born.

Al-Hasan ibn Hani has composed the following verses, favouring the opinion of the Shu'ubiyah.

I live among a people between whom and me the only ties of relationship are empty claims
When the head of the tribe calls me by the name of kinsman, I lightly respond to this ridiculous claim.
The Azd of 'Uman ibn u-l-Muhallab raise their heads at first when families are contending for honour; but their pride is humbled at last.
So Bakr think that the spirit of prophecy descended on Mimsa, while he was still a foetus in the womb!
And Tamim claim that none could be like their Ahnaf to the end of time.
After this I cannot blame Qais if they were to vaunt of Qutaibah! Verily talk flows in various channels.

Answer of Ibn Qutaibah to the contention of the Shu'ubiyah.

Says Ibn Qutaibah in his Tafdhilu-l-Arab [The superiority of the Arabs]:—

As to the party of equality, some of them have laid hold of the letter of some words in the Holy Book and in the Traditions, and decided accordingly, without searching for the true sense of the words. They seized upon the words of the Almighty, “The most honoured of you in the sight of God are those who fear Him most,” and His words, “Verily the believers are brothers to each other, do ye make peace between your brothers”; and upon the words of the Prophet in his sermon during the farewell pilgrimage: “Ye people, God has removed away from ye the pride of the times of ignorance, and their vaunting of fathers. No Arab is superior to a foreigner, except with regard to piety. All of ye are from Adam, and Adam is from dust.” As also his saying, “The blood of the Muslims are equally retaliated, and the least among them shall be able to pledge their word, and they shall be a help to each other against their enemies.” Now, the true sense of all this is that all believing men are alike before the law, and their positions are the same in the sight of God and in the life to come; for if all men are alike in the things of this world, and no one is superior to the other except so far as the affairs of the next, there will not be in this world high or low, a superior or an inferior. What, then, is the force of the Prophet's injunction, “If the chief of a tribe come to ye, do ye receive him honourably,” and his saying, “Pardon the faults of men of good position,” and his saying with regard to Qais ibn 'Asim, “This is the Lord of the

dwellers of the desert." The Arabs used to say, "The well-being of mankind is assured so long as they differ in degree; but when they become equal in rank to one another, they perish," meaning by this that their condition will continue to be flourishing so long as there are among them people of high degree and good men, but that were they to be made as people of one class, they would be ruined. And when the Arabs wish to depreciate a people they say "they are as like to each other as the teeth of the ass." Indeed, how can men be alike in merit, when things in man's own body, the limbs, are not on an equality, and the joints are not the same; but on the contrary, some of them are superior to others, the head for instance is superior to the rest of the body, for it contains the intellect and the five senses; and it is said of the heart that it is the king of the body, while some of the limbs are servants and others are served. Ibn Qutaibah goes on to say: "Among the weightiest pleas that the Shu'ubiyah have preferred against the Arabs is to vaunt the fact that Adam is one of them; and they cite these words of the Prophet: "Do not place me above him, for I am only one of his many excellences." They also glory, in that all the prophets are of the non-Arabians with the exception of four Hud, Salih, Isma'il and Muhammad; and they adduce as proof these words of the Almighty, "God has chosen Adam and Noah and the family of Abraham and the family of 'Imran above all men, descendants one from the other, and God is all hearing, all-knowing." Again, they vaunt of Isaac, son of Abraham; and that he is son of Sarah; and say that Ismail is the son of a slave-girl called Hajar; and this is what their poet has said:—

In a country wherein 'Uku has not attached a rope nor pitched a tent, nor
Akk nor Hamidun;"

Nor have Jarm or Nahs a habitation therein. It is the dwelling place of the children of the Free, a land wherein Chosroes built his abodes and in which not a man of the son of the Lakhna [slave] is to be found.

The children of the free, according to them, are the Persians; and the sons of the Lakhna, in their opinion, are the Arabs, as being descendants of Hajar, who was a slave. But they are wrong in this interpretation, for it is not every slave that can be called Lakhna. That slave-girl is called Lakhna who is employed to do menial service such as the tending and watering of camels and the gathering of fuel; the word being derived from al-lakhn, which means stinking smell; for we say of a water-skin lakhina, i.e., it has become rancid. As for a woman like Hajar whom God has purified of all stain, and approved of her as wife to his friend [i.e., Abraham], and as mother to Ismail and Mohamed, the pure, whom he made to descend from her, it behoves not a heathen to call her Lakhna, how much more a Muslim.

The reply of the Shu'ubiyah to Ibn Qutaibah.

One of those who affect the opinion of the Shu'ubiyah thus replies to Ibn Qutaibah's argument as to the difference in the ranks of men and of some being superior to others, and their being liege lords and vassals among them:—

We do not deny that men are of different classes and they differ in merit, and that some are superior and some inferior to others, and some noble and others of low degree; but we contend that these difference among men do not arise from their ancestry or lineage, but, on the contrary, from their own deeds and personal character, and from the nobility of soul and highmindedness. Do you not see that if a man were of a mean

spirit and devoid of manliness, he cannot attain a noble position even though he were of the noblest of the families of the Banu Hashim and of the best family of Omayyah, and although he should be of the best stock of Qais? Indeed, he is noble whose deeds are noble, and he is high of degree whose spirit is high; and this is the meaning of the Prophet's words: 'If the chief of a tribe come to ye, do you receive him with honour,' and of his saying, speaking of Qais ibn 'Asim: 'This is the lord of the dwellers in tents.' He spoke of him in this way for the high position he had acquired among his tribesmen for his defence of their womenfolk and his liberality to all. Do you not see that 'Amir ibn-Tufail, who was of the noblest family in Qais, says:—

Although I am the son of the Lord of 'Amir and her warrior famous in every fight,
Amir has not made me her lord by right of heritage. God forbid that I should rise through father or mother.
But (it is because) I defend her sanctuary, prevent any injury to her, and repulse the attacks of her enemies.

Another poet has said:—

Although our descent is a noble one, we do not rely upon lineage.
We build up as our forefather built, and we do the like of what they did.

And Quss ibn Sa'idah has said: "I shall give a judgment amongst the Arabs, which no one has ever judged before me, nor will any one dare to set it aside after me."

"If a man reproaches another for a blemish redeemed by his personal nobility, no blame can attach to him; but whoever lays claim to nobility, being of a vile nature, does so in vain." Similar to this is the saying of 'A'ishah, mother of the believers: "A man of noble race if base, should be considered a man of base origin; but a man of base origin, if of noble spirit, should be considered a man of good birth." She means by this that a man ought to be judged by his own disposition and qualities; if these are good, the baseness of his origin does him no injury whatever; and if they are bad, the nobility of his origin does him no good whatever. The poet says:—

It is the soul of 'Isam that has ennobled 'Isam.
And taught him to advance boldly to the fight.
And has made of him a great lord:

And a certain man made in the presence of Abdu-l-Malik ibn Marwan a speech which was full of eloquence. Charmed with what he had heard, 'Abdu-l-Malik asked him: 'Whose son art thou, O youth;' said he, 'I am the son of myself, O Prince of the Faithful; for it is by my mind that I have acquired this position near you.' 'Thou art right,' was the reply. The Prophet has said, 'The pedigree of a man is his wealth, and his nobility is his religion.' And Omar Ibn-l-Khattab has said: 'If you have wealth, you have distinction, and if you have religion, you have nobility.' Indeed, I have not met with a stranger case than that of Ibn Qutaibah in his *Tafdhilu-l-Arab*; for after exhausting all his powers in proving the superior merits of the Arabs, he finishes by expressing the same view as that of the Shu'ubiyah, thus demolishing at the end what he had built up in the beginning; for he says at the end of his account:—"And the most equitable view, in my opinion, is that all men are descended from one father and mother; that they were created from dust, and to dust will they return; and they all pass through the uterus and are befouled by impurities. These facts should prevent men of sense from exaggerated

ideas about themselves, and from pride and vaunting of their parentage ; for after all they shall return to God, where their high pedigrees will be of no account, and their worldly honours of no consequence save one whose honour is the fear of God, and whose tie is obedience to His laws."

The *Shu'ubiyah* also say that the *Arabs* in the time of ignorance used to take each other's women as wives, during their raids, without the marriage contract, and without waiting the necessary period to see if the woman was with child from her husband. How can anyone say who his father was, they say. *Al-Farazdaq*, in his eulogy of the *Banu Dhabbah*, extols them for their carrying off of women, and says, in reference to a captive woman whom they had taken from *Banu 'Amir ibn Sa'sa'ah* : "She fell to the ground and they held her in their embrace, and their only cover was their long spears."

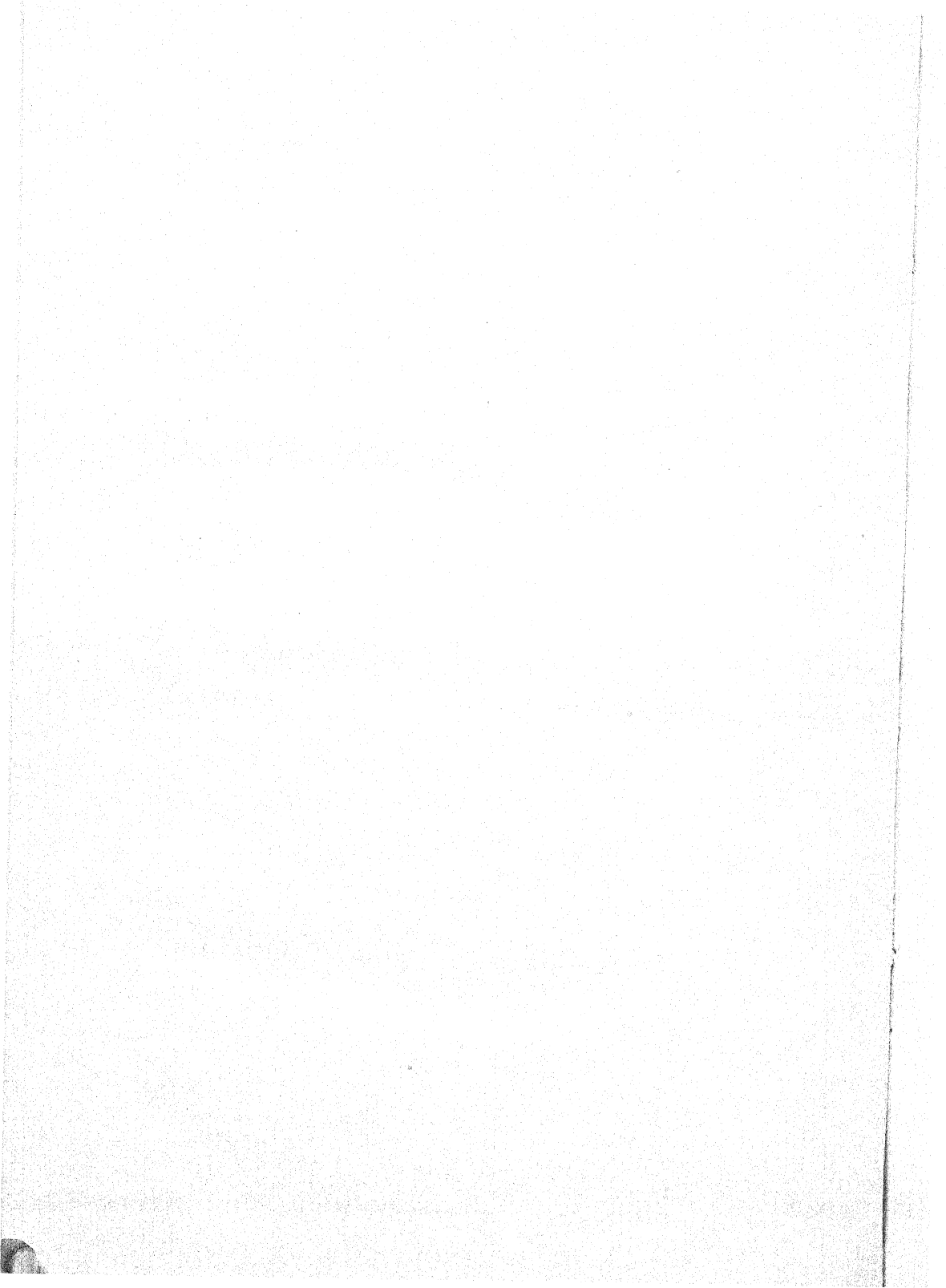
In the foregoing pages I have given, I trust, a sufficiently exhaustive history of the origin, growth and development of this most intensely interesting movement in the history of *Islam* ; and though it would be unsafe to differ from so eminent a scholar as Dr. Goldziher who holds that the *Shu'ubiyite* party was not a party of the discontented and the rebels,¹ still it is impossible to believe that a party which preached the gospel of equality and which continuously fought for light and liberty was utterly divorced from politics or political aspirations and had no connection whatever with the political conditions of those times. I am inclined to believe, as I have stated at the outset, that such a party could not have at all come to existence had it not been for the despotism of the *Omayyads* which in defiance of the principles of *Islam*, namely, equality and brotherhood of all *Muslims*, rivetted every shackle tighter and stretched every breach wider between the ruling race and the foreign converts to *Islam*. The Arab warriors and their descendants could not, for an instant, conceive that conversion to *Islam* raised a foreigner to a level of equality with the genuine-born Arab. The Arab always looked upon himself as belonging to the ruling race which was called upon to govern the foreigners, the barbarians, the *Ajami*. Here lay the cause—destructive alike of the *Islamic* theocracy and the Arab Imperialism—which developed the growth of the idea of nationality, further aggravated and intensified, as it was, by years of misrule and mal-administration, nepotism and jobbery. While the theoretical *Islam* did not believe in the distinction of races and colour, the ruling House of *Omayyah* claimed for themselves rights and privileges and prerogatives founded not upon *Islam* but upon might and power and pursued a policy of unmitigated despotism which reached its height and aggressiveness in the person of *Hajjaj*. The subject races felt that conversion to *Islam* did not, after all, secure equality with the Arabs, and that the *Islamic* teaching, as interpreted at least by the Arab aristocracy, was a fiction, a myth, and a mockery. The more the learned class developed among foreign converts the greater became the influence of the client, and all the more heavily did this circle feel its subordination to the ruling class consisting of the descendants of the conquerors.

In their souls lay sheathed the swords of the spirit ready to flash forth and smite, and hence the unceasing insurrections and rebellions under the *Omayyads*, if not initiated, at all events largely backed and supported by foreign converts. The entire policy of the *Omayyads* was deeply offen-

¹ Goldziher, *Muh. Studien*, Vol. I, p. 147.

sive to the Muslims of non-Arab nationality who, though crushed under the iron heels of Hajjaj, could not forget the glory and splendour of their national traditions and national history. After Hajjaj, though the Muslim Empire was outwardly quiet for a time, still there were ominous undertones of disaffection which repeatedly burst forth in the shape of insurrections and rebellions. The Arab and the Ajam represented two adverse currents of political thoughts and political creed, incompatible, irreconcilable, eternal in antagonism as the poles. The origin and beginning of the *Shu'ubiyah* movement, therefore, we cannot but trace back to the political conditions of the times. On any other supposition we can scarcely give a satisfactory explanation of the origin of this movement. The various nations included in the Muslim Empire—the Arabs, the Persians, the Syrians, the Nabathæans, the Egyptians, the Turks—were all Muslims, and in the eye of Islam brothers irrespective of nationality. Their faith alone was the passport to the full rights of citizenship in the theocracy. Islamic government, in its essence, was not local or territorial or national, but religious. It was one compact confederacy united by the tie of Islam, and as such there was no room in it for the idea of nationality. If this original spirit of the Islamic government had been maintained and kept up, there would have been no occasion for emphasising the distinction of nationality. All—of whatever race or nationality—would have enjoyed equal rights and privileges. But the high ideal of Islam failed, and failed most hopelessly in practical application, and inasmuch as similar rights and privileges (as enjoyed by the Arab aristocracy) were not conceded to foreign converts, they winced and smarted under their political disabilities, and as a protest against the injustice of the Government dreamed of the days of their national government and sang of the glories of their forefathers. This party, therefore, was the direct outcome of the storm and stress of oppression and despotism under which the subject races suffered and pined in the days of the Omayyads. True, it was only under the Abbasids that this party boldly stepped forward as an organized body and openly advocated its doctrines, but it does not follow from this that the masses of foreign converts, under the Omayyads, were not animated by the same spirit or inspired by the same zeal.

As I have already stated, under the Abbasids better days dawned upon the *Mawali*, and they gathered strength and fought their battle. Their learned men only gave expression to the thoughts and sentiments of the inarticulate masses, thoughts and sentiments that were, so to speak, long in the air. In the arguments of the *Shu'ubiyah* party we cannot fail to detect an animus and bitterness which savour rather of political than literary controversy. One word and I have done. According to my reading of the history of this movement it illustrates one supreme and eternal truth which all governments might well take to heart. Physical force might prolong the existence of the body-polity but it cannot ensure its permanence. The only sure foundation of a government is in the loyalty of its subjects, but loyalty cannot be secured by despising them and excluding them from their legitimate share in the government and its administration. History repeats itself, and those very problems which confronted the Omayyad statesmen nearly a thousand years ago are now before us, different perhaps in their setting, but in their essence unchanged. No better epilogue can I find for this paper than in the language of the late Bishop of Oxford, perhaps the greatest historian of our age: For the roots of the present lie deep in the past, and nothing is dead to the man who would learn how the present comes to be what it is.



The Electric Arc-light-lit Microscope.

INTRODUCTION.

There are two points in connection with Mr. Dubern's works, on which I should like to make a few remarks. Both these points are important steps in the study of minute structures of things whether living or not.

(1) He has devised an excellent method of demonstrating the minuter parts of things with a much lower power than we ordinarily use, the real secret of this step lying in the new and excellent method of illumination, which he has himself improvised.

(2) That with the help of this method, he has been able to demonstrate the very minute particles which are distinctly seen glittering about whenever any solid is triturated in a liquid, and a drop of this is placed under the microscope. These, he believes, are the "vital molecules," which are a step further behind the "protoplasmic mass," which protoplasmic mass is up till now assumed as the "unit of life."

That this motion is vital is of course not yet definitely proved, but some of the circumstances in its favour in this connection are :—

1. That they do not obey the law of gravity.
2. That their fitting cannot be explained as due to the light thrown on them, as generally it happens that when one goes in one direction, another near it goes quite in the opposite.
3. That when they collide, instead of having their velocity diminished, it is the more increased, "as if irritated by opposition."

The second problem about the "living molecules" or spheres is no doubt still hypothetical; but the first, *viz.*, the method of illumination, is a great advance, and a significant discovery in the higher microscopic works.

With the application of this method of illumination, namely, a strong condensed electric light, rendered into a parallel pencil by passing through a lense, and undergoing a series of total reflections from the two surfaces of a thick glass slide, with an inclined plane for incidence at its side,—a blood corpuscle, with only $\frac{1}{8}$ objective, is shown to be constituted of minute parts or spheres which cannot be made out even with $\frac{1}{12}$ objective in the ordinary way (nor even with the $\frac{5}{10}$ objective of Beale).

This hypothesis of minute "living spheres" is not without a parallel in the domain of science. Sir Oliver Lodge, in his *Romanes Lectures*, spoke in a similar tone in connection with the ordinary atoms and molecules, that they are composed of minuter parts or spheres which revolve round the central body, just as the planets do round the sun in the solar system.

Examined with Mr. Dubern's method, even the molecules of inorganic substances show similar activity; and in this respect they resemble living things. Dr. Bose's experiments establish the same conclusion by another method. Mr. Dubern tries to establish that conclusion by the examination of material particles which hitherto were believed to be ultra-microscopic, and from their functions and motility which he believes are

the manifestations of primordial life ; while Dr. Bose establishes it by his hypersensitive galvanometer by showing the similarity of response in both the so-called living and the non-living. The so-called "Brownian motion" is not yet explained in any very satisfactory way. Now a much further insight into it is possible with this illumination.

Many of the ancient and modern philosophers believe in the same doctrine. This view was entertained in Hindu Philosophy. Leibnitz held the atoms to be endowed with all the attributes of a living organism—"rudimentary consciousness and will," which by higher organisation gradually develops into the higher consciousness and will of man ; but the experiments with this microscope appear to prove directly what have hitherto remained more or less doubtful deductions or inferences from hypothetical entities.

To define "life" in exact terms is very difficult. Two essential features of it are "consciousness and will." These have got so many grades, that in the lower level they almost merge into an imperceptible condition. Nearly about this level, is there the only possible place for the so-called "vital spheres."

In other words, there is a tendency in scientific minds to explain everything as different grades of one and the same primordial thing, thereby unifying the whole system of multiplicity, by the assumption of something common to, and underlying them all.

In the domain of bacteriology, the *bacilli* are believed by some to be constituted of a number of *cocci* bodies, or "living spheres" if you please, placed side by side in a linear way. And similarly protoplasmic mass is thought to be composed of *grannules* which are themselves motile, as actually seen in the protoplasmic circulation of granules, and in *Amœboid* motion, and in pseudopodial and ciliary motions as well.

To conclude, there are every indications to suggest, that the protoplasm—whether it be the "*monera*" or "*protista*," (Haeckel)—is not the ultimate "unit of life" but there is something minuter still behind them just as in the inorganic world the atoms themselves are not the minutest—(Lodge). But as to whether the motile spheres shown by Mr. Dubern are really alive, and are the "living molecules" or "unit of life" is still uncertain, though no doubt there are several presumptions in their favour.

INDU MADHUB MULLICK, M.D.

Calcutta, 23rd March 1908.

The Electric Arc-light-lit Microscope.

By G. DUBERN.

PART I.

This instrument can distinctly show to untrained eyes in microscopy the extremely minute objects referred to in this address; nevertheless the experiment depends on a very peculiar style of most intense lighting, the success of which rests on trifling circumstances subjecting it to probable failure when exhibited elsewhere than in its own "habitat," i.e., a very quiet private laboratory.

To those who may grow sufficiently interested by what will just now be somewhat explained, I propose to give a clear ocular demonstration (by private appointment) of the cardinal fact of this lecture, viz., of the existence of the vital molecule, and this instrument's ability to show it.

The existence of the vital molecule has given rise to severe controversies and divided the scientific world into two bitterly opposed camps, the biogenists and the a-biogenists, whose most convinced and enthusiastic champion Dr. Bastian—of spontaneous generation fame—has been very nearly silenced by the mass of general contrary opinion, though he has by no means been defeated yet.

The reason for this is not far to be sought; all the while this well-guarded "golden fleece," so much sought for daily by hundreds of microscopes all over the continent, but especially in Germany, in France, and in the United States, has remained invisible—yet its existence is believed in.

Strangest of all, though our best modern instruments had hitherto failed to trace it, the introspective vision of the sages of old did discern it, and they also described it, gave a most appropriate name to it, exactly corresponding to its present appearance in this microscope field; they have described its omnipresence in all matter and placed it as the primordial indestructible unit starting the formation of *all* matter. Now, this vital molecule is traced in all matter as forming the total bulk of it.

A similar but not so particularized description has been given through a scarcely known modern revelation at an inspired lecture in London, 1871.

But when did those less favourably situated sages of old promulgate these facts? Over 3,000 years ago, they thus anticipating all the knowledge which our so-much-boasted-of modern profound achievements have attained. And where are such descriptions to be found? In the (till recently) most neglected records of the world—I mean the Vedas.

The following are a few of the translated Vedic *slokas* pointedly referring to this very subject:—

"The first appearance of atoms is in the state of fertilized germs. They collect together and form matter which is being continually transformed and improved by the three grand principles of life, water and heat and by the pure fluid called *Ākāśa*."

"Every drop of dew that falls is an exact representation of the great all, an atom of the *Paramātmā* or universal Soul, and each of these atoms possesses the two principles that beget the third."

"Nothing is commenced or ended, everything is changed or transformed. Life and death are only modes of transformation which rule the *vital molecule*, from the plants up to Brahma himself."

—*Atharva Veda.*

"They do know that every fragment and atom of dust—no matter whether on this earth or throughout the realms of eternity—is quivering with life; life is agitated by spirit" (Mrs. E. H. Britten's inspired lecture—London, June 25th, 1871).

Commentaries over these are unnecessary. Truths and facts have a common characteristic, they are self-imposing, they need not be enlarged upon by human ingenuity; they are generally thereby belittled; they need only be traced or discovered at the right fulfilment of time, at the bid of Universal Providence.

This microscope was designed to investigate the origin of life. The usual ones best adapted to such purposes are bacteriological superior microscopes furnished with very costly, very high power objectives to permit of dealing with the finest germs, which have then to be stained by diverse colouring fluids to destroy the necessarily great transparency arising from their great tenuity, which renders them invisible. As an original investigation process, this is evidently very objectionable, because it first alters considerably the condition of the thing looked for. But even after that staining, the amplification power to be used to see anything at all is so great, that as it also amplifies the motion of any free object, these are made to appear as shooting stars, in and out of focus immediately. To obviate this, it is necessary to mount and fix all motile objects, *viz.*, a further very objectionable interference with the object's natural state.

All this not only tampers with them but also entirely prevents the observation of their free capabilities. Such working circumstances are yet more objectionable when unknown primary data are to be searched in the course of such extremely delicate processes as radical life investigations concerning slenderly equipoised hypothetical vital functions which are stopped or destroyed by the fixity of the very mounting, as it prevents the observation of the intended search into peculiarities of vital entities.

Something different from that technique was necessary to hunt for the origin of life in its natural and undisturbed, more promising reserves, left in their own natural conditions.

After miscellaneous diverse trials accompanied by the very many disappointments necessarily following the departure from the well-beaten good paths into other directions, this presently exhibited electric-lit microscope was arrived at, in opposition to all microscope practice of toning down the illumination formerly necessary to secure a good definition sufficiently avoiding the blurring and confusing effects of diffraction lines so common to all strong lighting and high powers.

This microscope is now not only able to use the very strongest direct electric or sun light, but it is designed to further concentrate either of those lights' intensities to about another hundred times their ordinary one. And as to the confusing and blurring diffraction lines which it is *impossible* to stop, they are avoided by the eye being set nearly at right angles to the line in which they would be visible.

The details, explanations and the means of carrying out such technical requirements need a whole chapter to themselves, and are presently best passed over here.

Now it is necessary to arrive at a distinct understanding of the power of this instrument on usual daily computation notions, avoiding the tedium of the very complex microscopy technique.

Even with the low powers of 1" objectives which give an amplification of ten diameters and in combination with the lower eye piece 5, bringing up the total to 50 diameters, giving a proportionate surface amplification of only 250, such deeply hidden secret of nature as the primordial living

particle becomes a very distinct (but not comprehensible) exhibition without the help of staining or mounting.

To have a sufficiently good view to critically study the vital molecule, it is necessary to use an amplification of 800 diameters. It is then seen to be about the size and form of a small dew drop, as referred to in a way in one of the *slokas* of the Vedas. Its apparent size, then, corresponds to a pearl $\frac{1}{40}$ of an inch in diameter, or say to the diameter of the shank of a medium-sized pin; in other words, it looks much like a grain of sand.

Areas of circles being proportional to the squares of their diameters, which in this case are as 1 of the actual unamplified vital molecule is to 800 of the amplified visible size, the proportional sectional areas of each are as 1 is to 640,000; that is to say, the *actual* invisible size of the vital molecule is $\frac{1}{640,000}$ of the visible amplified size which, to those unaccustomed to the realisation of microscopic amplification meaning, may be explained as requiring 640,000 vital molecules to be merged together to make up the surface that is seen in the microscope field, and which to the naked eye would then be represented by the end surface of an ordinary medium pin shank cut halfway between its point and head.

But the vital molecule is not a flat disc: it is a perfect sphere so that its actual bulk relatively to the amplified size stands as its diameter cubed, divided by 0.5236, which gives an apparent bulk 268 millions (nearly) times larger than the actual volume of the vital sphere.

On the other hand that apparent size is the one represented by a sphere of the same diameter as a pin shank, or say, by a fine grain of sand; hence the bulk of vital molecule must be set forth to one's own imaginative powers as the $\frac{1}{268,000,000}$ part of a grain of sand. It is necessary to insist on this point to get to a somewhat corrected mental image of what these vital molecules are like, and to understand somewhat about them on a similar basis of appreciation of usual things around us.

The above fraction scarcely offers itself in a way to leave an adequate conception graspable by any but mathematical minds.

The time that it would take to count in coins the number of vital molecules to make up the bulk of a single grain of sand, may give us the chance of 'our self' understanding 'itself' when trying to mentalise $\frac{1}{268,000,000}$ part of a grain of sand of $\frac{1}{40}$ inch actual diameter.

Suppose that one of us began counting rupees one by one from 6 A.M. to 6 P.M. daily without any interruption, at the rather fast rate of three rupees per second, it would take somewhat over *two years and nine months* of that hard work to count enough to represent the number of vital molecules that go to the making of one such grain of sand.

And it needs be added that some vital molecules obtained from organic matter of small insects are very distinctly shown as mere sparkling specks, too small to be at all measured, except by comparison with larger measurable ones by their side, which by estimation are about five times as large in diameter, thus giving $\frac{1}{200,000}$ inch for the smallest actually seen.

So far they are seen without any staining or mounting but for reasons too long to be gone into here, inferentially it may be argued and deduced from actual observations that there are vital molecules about one millionth of an inch in diameter.

These are the individualities this microscope is called upon to try to fairly show and help in studying towards the formation of acceptable ideas concerning the vestiges of nature's primary workings often called "creation," but which may truly be seen to be continual transformations of what already

existed appearing as creation simply because of the hitherto unknown or unperceived fountains of the "unseen" which precede the 'seen.'

After this sufficiently graspable example of what a vital molecule is in size, it may not be wondered that though it was distinctly referred to in the above quoted extracts from the Vedas, it remained unseen quite over 3,000 years till now.

The next step to the tracing of the vital particle or physiological primary unit out of vital objects such as fungi, muscle fibres, wood, seeds of plants, and such material out of the animal and vegetable kingdom, was to hunt for it among the chemical elements themselves out of which all such organic matters are composed, and they were found to yield identical particles quite motile, as active and alive.

Homœopathic triturations, and particularly metallic silver, gold and platinum were examined, and identical behaviour of particles was to be seen, all possessed of the same character of jerky, romping-about mysterious propensity, but slower in those that are heaviest.

The attempt to stop and crush out life by a vigorous, prolonged, powerful crushing and trituration in an agate polished mortar had no effect; and not even a single vital molecule sphere was ever obtained in a broken condition; *not a single piece* of a broken sphere has ever been got out of such brittle matter as quartz or glass—the vital molecule is unbreakable or indivisible. Each trituration had the effect of stirring them into greater activity; apparently they were irritated by such unceremonial process.

The combined effect of heating to white heat, hard crushing and grinding, followed by immersion in the strongest nitro-hydrochloric acid specially prepared by the late Dr. Waldie for these experiments, in which he took great interest, had yet no effect whatever.

Finally, as a crucial experiment, carbon was *volatilised* by electric heat, *i.e.*, by volatilizing the fibre of an incandescent lamp (before breaking its globe) by means of an extra strong electric current; but the condensed vapour of carbon adhering to the sides of the globe, subsequently broken, was found to be as comfortably alive thereafter as if it had been refreshed by the gentle zephyr of quite 6,000 degrees Farh. temperature.

Though I have been unable to destroy vitality by any physical, mechanical, or chemical combination of the highest grades or energy, or diminish its activity—except it did so at its own sweet will—to any mentionable extent, I have been able to inhibit it, that is to say, to provisionally stop all external manifestation of vital activity or aggregating propensity to form into extremely minute amœbæ; for a time the vital molecules appeared as absolutely dead or insensible to considerable heat and excessive light stimulation, but they were nowise anything like dead. The moment that the inhibiting circumstances were removed, they were as lively as ever. I have never yet come across (since this microscope became a workable instrument) any matter that is not alive or that may not be started on a living course at any moment from a simply alive but non-living state, to an active, living phase.

The striking characteristic in all is that the ultimate vital particles, whether they be those that come from a man, or quartz, they are all about the same size, $\frac{1}{10,000}$ part of an inch in diameter or practically, an average light wave length; all are perfectly spherical and strut about without any limb, flagellum or external prominence beyond their spherical body; all have the same characteristic jerky, capricious style of motion, more or less active; and they have not the slightest regard for gravitation from the relatively light wood vital particles which float

downwards as well as upwards, to the very heavy gold vital particles which float upwards as well as downwards in perfectly closed vessels quite devoid of any air-bubbles or air at all, for they do so in nitric acid as well; only platinum is there, whose vital particles move about rather sluggishly and in small number, most of them either remaining idle at the bottom of the cupped glass slide; but some are zig-zagging on the bottom surface and some in the middle of the liquid.

As no destruction of vitality could be brought about, the conviction grew that there is no end to life but only to certain structures of life. And if there be no end to life, the inference of no beginning to life is inevitable; so that the hunt for the "origin of life" looks very much indeed like hunting for a "mare's nest." This was soon exchanged for a tentative axiom of "No beginning and no end to life." No wonder that the origin of life is yet being looked for—it will never be found.

Even no transformation of life under short periods of some days could be got to, except aggregations of vital units into binomials, trinomials or at most to a few multinomial motile grades with hybernating periods, in favourable circumstances suitable to life developments. Inhibition is secured by unsuitable conditions to living developments. Multinomial grades amount to formed fixed matter. They are entirely free from external activity and are subject to gravitation, permanently falling to the bottom of the cupped slide and remaining there without any tendency to float though of light gravity.

One case of dormant life in possession of the writer is in a blow-pipe sealed glass vessel. It took over five years to reach absolute dormant condition from which neither heat, light, magnetism or their combination can now raise the vital molecules to activity short of breaking such precious vessel, which proves the falsity of notions concerning the scientific statement about "*Pedesis*" ever-lasting activity.

The Radical life potential is not destructible nor transformable in the course of short periods, though it transforms; whereas all other potentials are more or less immediately transformable into each other; hence VITALITY PROVES ITSELF TO BE THE ONE FIXED UNALTERABLE POTENTIAL OF OUR UNIVERSE, and consequently it is of a higher category than all the others. This would be concordant enough if it were established that other forms of energy are but descendants or effects of it, and therefore unable any ways to affect their own higher grade cause.

We are all made up of these vital molecules at some more or less advanced grade of evolution. They can be extracted from any part of our bodies from head to foot in quantities of some 1,340 millions for each pin's head bulk of our dessicated substance. If the body of a man was dried up to solid matter so as to fill but one cubic foot, the number of them would be found so great as to be unimaginable.

Yet they are all essential to keep our vital machine going its way both on the material and mental plane. We extract them daily by the billions from our food, and indeed we may say that we live because we feed on life; and that we are transforming machines of vital energy in terms of the third *sloka* quotation from the Vedas, taking vital energy from miscellaneous grades and delivering it again into, let us hope, higher or superior ones.

Such is no doubt the rôle of man intended by nature as well as it is the one of any other organism or thing which is not simply alive, but also living. The main trend and purpose of life's course on earth is to take up the living potential at the grade that it is left at by some of a lower grade, to refine it, to sieve it, and to hand it over to a higher rung of the life ladder.

But on this trend we shall soon find ourselves encroaching on the lines of morality and intellectuality, for, indeed, besides the ponderable matter of the vital molecule which to a certain extent is hollow, though not quite visually demonstrable, there needs be a spiritual imponderable matter, or ensconced entity of some sort as tenant, director or manager of the really amazing performance it exhibits, because in neutral vital molecules, organic evolution has not yet begun, but nevertheless its automatic activity is stupefying, and is no doubt prophetic of its future, because a vast quantity have already risen far above the neutral stage.

It is well worth pondering over what these little things abstracted from seeds, in thousands of millions units, make themselves into, and how they can work out reproduction tantamount to a continuous evolution of *new edifices* on vital principles' cultured acquirement of ages, which anyhow cannot be construed otherwise than *absolutely miraculous performances*. Their omnipresence and their eternity are certainly two characteristics that we cannot easily disconnect from a divine course, whatever they be essentially, and whatever their functioning mechanism be.

It is practically certain that vital molecules are shells; and that they are shells with at least one opening, and perhaps two, is a necessary disposition to account for their self-motion in a liquid, without any external limb, paddle or flagellum. They are sufficiently potent to have no need of mechanical limbs. They appear to inhale some liquid through that aperture and next squirt it out as a jet which, through reaction, jerks them here and there backwards at the rate of four or five steps per second. The internal sparkling or twinkling light they all emit coincides precisely with each step and proves their internal function as well as absence of solidity. This all agrees with mechanical laws to account for their jerky gait.

In chemical compounds there needs be a shell-within-shell mechanical structure so as to not disagree with observations and many collateral facts.

For instance, let us take sulphate of silver Ag_2SO_4 , which is a suitable substance for experiments because of its great insolubility. Primarily it is composed of one silver shell and one sulphur shell vital molecule, in combination with four oxygen molecules, one of which is in special partnership with the silver, forming the primary composite chemical molecule silver oxide (Ag_2O); and three of which are in another partnership, forming the primary composite molecule sulphuric anhydride (SO_3); both of those primary composite molecules have further coalesced into forming a secondary compound molecule ($\text{Ag}_2\text{O} \cdot \text{SO}_3$).

Now the metallic silver is a shell; the oxide of silver brownish powder is also entirely composed of shells; hence we have to infer that as the starting forms are shells and the compound resulting form is also spherical and able to strut about in the general way that simple elements do: and that as we have no reason to say that either of them, during the process of combination, departs from the universal tendency of all matter towards the spherical form,¹ there remains only one conception of that which we cannot see, namely, of sphere within sphere with a central hollow as the

8. ¹ The spherical form of matter is entirely in opposition to the prevailing theory of the constitution of matter as set forth by Haüy's investigations.

Though these last have been thoroughly examined and criticised by Weiss and also independently by Mohs, as well as rectified and extended by Brewster and also opposed on several points by Mitscherlich, all such probings refer to considerations of peculiar angular formation, groups, and characteristic position of elementary planes of crystals, their number, properties, etc. Quite another dozen of leading scientists on the continent also went into a thorough investigation of the constitution of matter on crystallographic lines, but the following basic or fundamental Haüy's enunciation of the ultimate constitution of matter, which it is necessary to notice is nothing more

mechanical constitution of the silver oxide molecule. Any other aggregation would not be in stable but in unstable equilibrium, and if not hollow, no conception of its means of motion in a fluid can be arrived at.

Exactly the same may be said of the primary composite molecule sulphuric anhydride (SO_3) because at the temperature of 60 F. *it is solid*, but a very difficult substance to deal with, so that by inference it may be said to be primarily of spherical constitution—like other solids that can be easily experimented on—all without a single exception.

Finally, as both those composite molecules, silver oxide and sulphuric anhydride are each spherical, and that again in further combination under the form of sulphate of silver they are finally observable as a single sphere molecule, there is apparently no other way to think of the complex molecule body but as sphere within sphere, and further, within sphere. The french formula ($\text{Ag}_2\text{O}, \text{SO}_3$) and the more recent (Ag_2SO_4) (*Ency. Brit.*) only differ as to one molecule of combined silver which nowise leads to a deviation from the sphericity argument. The many cases of granular observed texture of so styled 'amorphous matter,' also fall-in with this conclusion.

The crystallisation stage therefore begins at a later stage, most probably next to the formation of the composite stable molecules, when many similar molecules aggregate to form visible matter to the bare eye.

Which is the outer shell of the whole, could no doubt be ascertained from the fact that the same chemical element behaves somewhat differently in the 'nascent' condition when obtained from different compounds, this being probably due to its central or external position in the spherical compound body modifying the affinity action. But this is not meant to trespass into chemistry beyond exhibiting the last perceptible molecules of matter as spheres and beyond discussing some probable consequences arising therefrom.

firm than an hypothesis. has been nowise criticised, questioned or opposed by any of those eminent scientists; and according to the latest edition of *Ency. Brit.* it yet holds the ground as the accepted theory. It is thus, *verbatim*, set down in *Ency. Brit.*: "In each mineral there exists integral molecules—solid bodies *incapable of further division* and of invariable form *with faces* parallel to the natural joints indicated "by the mechanical division of crystals and with angles and dimensions given by "calculation and observation combined." (The underlining is mine.)

"Faces" imply planes of some area, and "incapable of further division" necessarily refers to the unbreakable molecules in terms of the chemists as usually meant, *i.e.*, the ultimate ones.

Now the electric microscope proves that any plane can be broken up into spheres (which any powerful microscope might have also shown); but it also proves that if any further breaking takes place, it is not into angular pieces of spheres which might be crystals and have more minute faces, but that after the spherical stage has been reached, nothing else but spheres can be got, thus setting at naught the ultimate crystalline constitution of matter as so often happens to hypotheses that cannot be checked by direct experiments or by actual view.

The universal tendency of matter towards sphericity of form would be far too long and out of place to establish here also concerning liquids and gases, but there are several considerations backed by facts leading to accept their ultimate constitution as spherical centres of (vital) energy in similitude to those of solid matter, demonstrable by inference only, as microscopy cannot be expected to do so directly.

But this improved microscope offers a firm and reliable starting-point to investigate again and further, the radical structure of matter on an experimental base, which is not even attempted but only guessed in crystallography and but superficially and roughly surmised by the symbolism groupings of recent symbology of chemical formulæ as in the *Encyclopædia Britannica*—this, most probably, arising from the well discerned absence of any perceptible reliable starting basis towards representing the actual form of the molecules, though certainly any material body has a form of some sort representable by drawing.

The hollow spherical constitution of molecules, from the very fact of its having a certain thickness of shell material only, should also have a great deal to do as to the mode of the actual transit of light through transparent bodies.

Of course this microscope is as yet but a scientific babe, and serial observations, experiments and researches in all branches of sciences need be carried on by specialists in each and all divisions to confirm, particularise, develop, apply, or possibly pare-off, something from the general lines above referred to.

Twenty-five whole-time scientists researchers would be but a small beginning in the vast fields opened out to view from such a stand; whilst a single individual cannot hope but to lose his way among the multiplicity of endless novel issues that arise from the fact that the hitherto considered inert matter is not radically inert but only liable to temporarily assume inertness.

It is a very different thing to consider an electric or heat potential behaviour in reaching a copper wire which is believed to be in an absolutely passive or neutral inert state, or again to consider such potentials on reaching a wire that is already the seat of billions of centres of activities of similar nature to themselves and of higher grade but possibly lesser potentiality—and in fact sometimes of greater and sometimes of lesser potentiality than their own. In the first case if it were actually so, it might be conceived as an empty pipe into which a fluid had to flow, whereas in the second case it would have to be conceived as a pipe already entirely filled with a fluid of the same sort but more or less potentialised than the in-coming one. The phenomena of extra-currents, well known to electricians, whose existence is highly mysterious, beyond being known as highly potentialised reactions, cease to be mysterious and become conceivable.

It would be out of place here to go into full consideration of such very important subject beyond stating that in the second case it would amount to starting the vital molecules of the copper wire into phases of reaction and action, all necessarily vibratory and under great stress, because of the settled cohesion of the spherical vital molecules in the hard copper wire. The spheres in contact only tip each other at points, instead of being an homogeneous metal formation; thus restrained, concussions need result instead of the free dancing steps which this microscope proves to be their primary natural propensity when not tightly huddled-up together into the solidity of a hard drawn metal.

A constrained living stage departing from the inhibited alive one they were in, must result as long as disturbed by more than the suitable ordinary amount of vital essence held in each sphere is not reached, and which they need discharge at any point if possible or at the other end of the wire if not done before. This can now be conceived to result into a *concussive* flow of vital matter at the wire end called electrical current in modern terms but which is a vital flow of imponderable matter similar to the one furnished by the electrical eel (*Gymnotus*) or by the torpedo fishes known to be intense enough to kill small animals and knock down horses if in contact with them in the same stream that they are in. This distinctly points out that we are not to expect a satisfactory account of the electric fluid from the mechanical or chemical provinces explaining vital electricity, but rather from vital electricity accounting for chemical electricity. Both are identical but have not equal claims to precedence which should be inverted from their present nominal relative position. The mathematic setting of the phenomena computation would remain just the same.

This necessarily cursory rush through an all-embracing subject does not admit of more than a few illustrations of the uses this instrument may be put to, as a plough in the fields of research and towards opening roads into extensive stretches of scientific wilderness. It can cast new light reflections

into quite obscure provinces of both the material and mental strata. At least it offers some guidance towards attacking a number of problems hitherto considered beyond analytic methods, and so, left in the background though of supreme interest and practical utility. A conceivable theory of the origin of heat and of light are both within measurable distance.

The following case is another illustration of the possible uses of that "plough." It has remained an unapproachable problem with due consideration to conservation of energy, though it be well felt that these laws must cover all natural processes or phenomena.

Our material body receives physical and material sustenance from its surroundings and from the food we assimilate. It pays off material results and discharges the transformed energy it absorbed from the food.

But it has been often queried, whence is coming the substance or specific food supplied to our minds to evolve the continuous emission of thoughts? Or again where from the supply to our intellectual functions, whatever they be, but which are no doubt some class of working processes and as such must consume or rather transform something, whatever that something be?

The only hitherto traced sources of energy supply offering some shade of possibilities give us yet no rational clue as to our thought energy being derived from heat, light, electricity, magnetism, or from the "affinity" influence or workings; and we know of no other, as vitality is not yet recognised as an independent energy source.

Now the revelations of this microscope seem to have removed the thick veil that hid the avenue leading to an acceptable source. The vital molecule may now and henceforth be observed well and long enough to arrive at one only discernible adequate comprehension of its behaviour, in agreement with the following *viz.*, that it is endowed with will, that it has some control over its peculiar antics, that it is capricious and captious in the course of its romping about; that it can be irritated and stimulated by moderate extra light and extra heat of perhaps only 20 or 30 degrees Far., though it can stand without being killed the temperature of 6000 Farh; that under some special circumstances, an aggregation of only four or five of them can show evident signs of distress, on life-distressing circumstances being brought about. So that from all the above the only apparently suitable summarizing is that it is possessed of *MENTALITY* as well as of materiality. On the other hand it preserves its vitality through the ordeal of 6000 degrees Farh., so that we are fairly justified in saying that in passing through the minor ordeal of digestion in the human stomach, it does not lose its mentality before reaching the thoughts, digestive organ or second "mental stomach," "the human brain," which it might be conceded finds the supply of substance to be digested and to feed the mind out of the mentality of the vital molecules circulating in torrents through the brain.

If this train of thought be provisionally accepted as sufficiently correct to lead to non-wasting time experiments, provisionally also we now may consider that when we feed our material body with matter that we see, we also feed our unseen mental or spiritual self with the unseen mentality in the same food contained in the billions of vital molecules.

I must now conclude by only somewhat justifying—though I have elsewhere fully justified—the use of the qualificative "miraculous" occurring above and which hitherto stands mostly as a mere opinion or assertion.

It will not at all considerably do to leave such vague glamour-shedding word to remain in its indefiniteness on simple assertion or mere opinion, as to its tolerable application to this case without setting forth the grounds

for it. It is first necessary to controvert the usual current meaning given in dictionaries, because of its inconsistency with radical facts.

Miracle in its more general meaning is as yet set down as a "supernatural event." Until recently it was set down more forcibly as an event *contrary* to nature's laws. But it yet needs to be brought further down from that superlative meaning. Or again nature's processes should be elevated enough in men's consideration to reach the very much higher gradation they deserve, so as to become 'par' to the present conceptions around the word "miracle."

Locke, had it "an operation contrary to the established course of nature, and hence divine." Hume, also had it as "a *violation* of the laws of nature." These are scarcely insisted on now, and are sliding out of the philosophical provinces notwithstanding those authorities. The fact is "miracles" take a very early short-cut, away from the physical start into the less known metaphysics, and between these and theological fields there is no well demarcated boundary traceable, thus involving a large amount of human, religious, and philosophical implications, and hence their vital importance in the moral world, not to be skipped over here, though not of the experimental category. But a crossing point has been arrived at, since this microscope has actually trespassed into and is working in the very land of *miracles*, if an average and not ignorant application of that meaning be given to it, and hence it now needs be circumscribed into a practical sufficient meaning.

The *supernatural* significance of that word needs be set aside immediately as will be readily seen, because nothing can lie or be above sufficiently understood "nature's" processes to necessitate running contrary to them. As will be seen, any of nature's simplest processes when profoundly enquired into, is found without a single exception to be transcendental or not humanly comprehensible, *i.e.*, all are physically and mentally superhuman. So they might very properly be classed as *miraculous* with the exchanged meaning of simply superhuman, instead of fully supernatural in the old sense.

It has long enough been a piece of glorified presumption for men in general, and for a considerable class of scientists in particular, who scarcely know anything of nature's radical working and therefore are ignorant of its most important springs, to have ventured to decide what is actually within or beyond nature's range of functions, province, or capabilities.

Even the superficially well understood simple process of the ordinary formation of such incompressible material as water out of the two elementary elastic gases combination of oxygen and hydrogen, is nothing short of miraculous to men, in the way of the alloy of two extremely compressible materials, suddenly resulting into an incompressible one contrary to all reasonable expectations that two very compressible and soft materials (gases) are able to become harder than one inch thick cast steel, and to burst it asunder by hydraulic compression dispositions, the weight of the steel being at the time, say, ten times the weight of the contained water.

Again the very fact of any one single gas departing from its gaseous condition and becoming a liquid at a certain grade of compression and temperature, changing suddenly all its former characteristics, is an absolutely miraculous event, not a bit comprehensible by men, specially when it is borne in mind that when the critical temperature is reached no further excessive amount of compression can reliquify it. These facts are nothing short of playing at "ducks and drakes" with the present developments of the human mind, information, sense, or reason.

All these primarily simple processes believed to be well understood, are nothing short of miraculous ; and if the sense of supernatural be yet adhered to, for miracle, it amounts to saying that nature is supernatural from first to last. If discarding the general miraculous notion, then we need set down that all nature's natural processes are also supernatural at least at some grades of their course. Every man's downright deep ignorance of all, excepting only the very numerous mere superficialities, as long as he remains armour plated by flesh and bone, does not at all sanely permit of the useful word "miracle" being applied to any other well defined but somewhat humbling meaning than simply "*superhuman*" or prodigious operation beyond our comprehension.

It is used hereafter in this last sense, meaning also a deed which remains unfathomable to our present perception (senses and minds) because of their inceptive evolution from animal mentality towards higher development, when such miracles may cease to be miraculous and become comprehensible. This use of the word will be nowise in opposition to nature's laws or course ; this last most probably appearing miraculous only when effects of superposition of laws combine where we now perceive but one, or a partiality of several.

When fully seen this apparently insignificant and astoundingly small vital molecule with its constituting contents, or more exactly, a colony of them, are possessed of latent capabilities, power, artistic skill, talent and organising genius, which are far more difficult to conceive and actually realise than their extreme minuteness, as above exemplified by two years and nine months counting of units to make up a vital molecule aggregation equal to an ordinary grain of sand. That was humanly realisable ; the following, though precisely true, is scarcely realisable. It again necessitates an illustrative comparison, perhaps as strained as the great Maxwell's illustration of what he meant to be explained by the presence of extremely small "demons" in matter.

Let us suppose that we have, not a chemical test scale, but a very strong *chef-d'oeuvre* testing scale, and that we place in one of its pans a colony of 1,340 millions vital molecules individualities as already referred to above, *i.e.*, quite 1,300 millions more numerous than the inhabitants in the British Isles. Let them be in the form and size of one single millet seed which you have found by this microscope to be identical to the other dried grains and to be composed of as many and similar separate individualities.

And now, place in the other pan, the picked best of 40 millions of the British inhabitants condensed individual capabilities, taking great care that all the designing abilities of architects, the erecting skill of engineers, and the effective capabilities of builders, be first and all heaped in it ; next, that all the cultured guidance of scientists, and all the discernment and compounding capabilities of chemists be secured to supply the first ones with proper serviceable and reliable best material. Again, let all the best physicists direct the smooth working throughout of all the above specialist's performance and see to no untoward accidents or harm happening to such of their working processes and to protect against external mishaps, disturbances, or mend them, should they happen ; and let all the best mathematicians step-in to calculate proportions, sizes, strength, and to regulate, particularise, and time-out the whole, concerning the order and phases of the manufacturing process of the *chef-d'oeuvre* that they are all bent on ; and further, complement the above workers by all the geniuses of the British Association, of the Royal Society, and of the Royal Artists Society ; in fact, let all the ablest, the best and most talented of the summarized English

national efficiency (or of the whole artistic world for the matter of that) help toward the making of that one *chef-d'oeuvre*, whichever it be decided upon to construct; and all their strenuous efforts, moment, knowledge and skill will not be able to raise a bit the pan of the scale in which that grain of millet is building its own *chef-d'oeuvre* out of a few pounds of wet earth. Its latent power and abilities, qualitatively, transcends to an unimaginable extent all the *summum* of the whole human best. The highest, most profound and clearest mind up to this date *cannot even trace the direction* of the first step to be taken towards effecting something that will become able to balance the latent potentiality, and eventually the producing powers of that millet seed colony of vital molecules.

That apparently humble little seed does its work quietly without any fussing over it, directing its 1,000 millions of artists in the right way to dig tunnels in the ground, to fetch the suitable materials, sort them, carry them, erect them, set them up artistically, tinge and colour them, etc., etc., and produce an object which is more complex than all the engines and all the clock works of England if put together to constitute a single piece of machinery, and which could at all compare with the number of parts constituting the mature millet stalk, unless also each separate screw and all pieces were counted separately to total an equal number of billions of parts.

And please consider most attentively and weigh very carefully the fact that the "President" or central government of these milliards of inhabitants of the millet stalk mansion, foreseeing that as they get worn-down, tired, or old and unable to continue their duties beyond the next autumn, and thus will need successors to avoid the vanishing-off of the strenuous labour of their race, and also to perpetuate their acquired industries' skill, they provide with a large margin for contingencies, for the continuity of their life's labour acquirements, by constituting complete well-closetted "Cabinets" of experienced ministers, subordinate heads of departments supported by very numerous highly-trained and qualified artisans, all imprisoned against any loss or disturbance in well-sealed and varnished little packages called "Seeds" (by us) prepared to begin, build, complete and adorn new mansions to be ready by next summer. This is neither imaginary nor over-stretched but unfortunately inadequately expressible in humanly comprehensible usual words without parable; but the fact in the above sense is literal.

Now, a most humble position has to be taken after arriving at this view; for that grain of millet, to all discernible intents and results, practically *miraculates*; men can only *imitate*, and at the best of times call on nature to perform miracles for him on any trifling necessity or fancy; for man can do nothing absolutely by himself, he can only invoke help and direct some other potentiality than his own, as indeed he has none at his service that he has not borrowed, except his own share of willing and directing power. And is that his own will after all? absolutely his own will? Does he really know what he does of his *total self* among the innumerable turmoil of rattling miracles he is continually connected to and involved in, some of which he directs consciously and some unconsciously?

One man per hundred thousand is scarcely aware of those crowds of stupendous miracles that he is submerged in. And some perhaps may see more into this without being further led on, that man's special activity is to help to direct (rightly let us hope) in his own locality, the drama of the universe.

In conclusion, it should appear to any men furnished with some decent amount of generalising and comparative inference capacity, if somewhat

backed by fair and penetrating criticism keenness, that such incommensurable superiority of a millet seed over men's *best, highest, and most*—till we find some more suitable way of expressing ourselves—may be conceded to be a prodigy agency or a miracle-wright; and that consequently the vital molecule actually centres in itself *miraculous power* which provisionally entitles it to be qualified as the *miraculous vital molecule*, just as it is set down by implication in the above third *solka* quotation of the Vedas as ultimately returning to Bramah himself, by a course of gradual higher and higher refinements, presumably reaching Deity itself, by-and-by continuously.

And where are we? In what sort of deep jungles have we lost ourselves? since it is not yesterday that this evolutionary course has been traced out, but over 30 centuries ago!

"Man, try to understand thyself," may be tried from several directions. Can we conclude this without pointing out that within ourselves each hair that grows—leaving out the reproducing secretariat—each performs similar duties to the grain of millet; that each main organ, such as the heart, liver, lungs, the eyes, the ears, and scores of other self-administered local governments are much more ably administered and are each about as complex as the whole government of England (this is not at all exaggerated for those who have an adequate discernment) each containing not a less number of separate entities and generally many more individualities than England's total population; that they are all conjointly working and elaborating substances night and day without having the chance of two minutes' holiday so as to keep the human machinery in tolerably good condition; and are doing it under such circumstances that five minutes dereliction of duty would mean complete disaster and death to the whole edifice.

Wonder of miracles, and stupendous accumulation of miraculous wonders, in all its apparent exaggeration, is only a very moderate expression of this epithet, nearly equally suitable to the man or the gnat *temple of life's miraculous rites*.

PART II.

The following is a description of the microscope with its additional mechanical improvement which I have placed on this table. It consists in the addition of a very long swing arm, hinged and connected to the microscope stand in such a way as to facilitate the adjustment of a special over-stage lighting system, otherwise of difficult use, thereby also providing a mechanical working appliance combining the action between the usually independent over-stage lighting and the sub-stage lighting. The arm supports a very intense incandescent burner or any of the most brilliant sources of light at its end, so conditioned as to secure certain advantages hereafter described.

The improved lighting system embodied in the above mechanical appliance consists in a new combination of two classes of lightings hitherto used separately, one of them being the ordinary sub-stage and the other a novel style of over-stage lighting by the most intense lights, they jointly exhibiting certain complementing characteristics of microscope objects which neither of them separately can show sufficiently to arrive at a correct interpretation of some objects under observation.

The microscope stand itself is of the ordinary description with eye-pieces and objective complete for observation by ordinary sub-stage lighting as usual.

But to its stand, preferably to the left hand side (when standing in

observing position) a long detachable arm *A* of square section is affixed. It is about two feet long and is attached to a short stem correctly centering and hinging the whole radially at right-angles to a straight line drawn horizontally along the face and from the centre of the stage towards the microscope stand main centre of frame.

Thus constructed the arm can travel up and down in a vertical plane, so as to stand at any desired angle above the horizontal plane of the stage at the various required angles to that plane, and which are between 35 and 48 degrees, essential to this lighting success.

Near the end of the arm *A* is placed a light holder *B* on an horizontal arm, able to slide along the main arm, and carrying either an incandescent burner, an acetylene burner, or any of the most intense sources of light, oxyhydrogen or arc light; the vertical stem *C* holding the burner is set on a slide *D* having an horizontal motion of about one inch, and is driven by the traversing screw *E*; the stem *C* is fitted through a nut and clamping nut able to raise or lower it about $1\frac{1}{2}$ inch; this, in combination with the above, provides for any correction of position so as to exactly adjust the light rays to the *precise spot* characteristic of this system, as hereafter described. By sliding the holder along the arm, any required distance from the centre of the stage is obtained for the precise focussing at the precise spot needed; the figure shows the disposition for an acetylene gas flame edge illumination.

At *F* is represented a long focus achromatic condenser, on the usual mounting, adjustable in all directions; it is also fitted with the usual traversing rack and pinion, as represented, for traversing the focus backward and forward. The optical axis of this condenser and the flame edge, or centre of light, are set so as to be in the same vertical plane which passes also through the optical axis of the objective *O*, whilst the arm *A* is so made as to be parallel to that same plane, and hence, from the above described position of its hinging centre, whenever it is moved up or down, to get the required best observing special angle adjustment, it carries the source of light with itself in the said plane, pointing always exactly to the objective's *O* axis during the search for the more suitable vertical angle for observation, thus facilitating an adjustment otherwise of considerable difficulty, unless the light source follows the condenser fixed to the same radial arm. After the suitable angle for observation has been found, the final focussing of light is made by means of the traversing rack of the condenser *F*, or if further found necessary, by sliding the light holder *B* along the arm *A*; *G* indicates the intersecting point of the objective *O* axis and of the intense lighting axis in the same geometrical plane. The ordinary sub-stage lighting from the condenser *K*, on being now directed by means of the ordinary arrangements to the intersecting point *G*, that spot *G* is now therefore lit from a twofold direction of lightings concentrated on it, *viz.*, from the sub-stage lighting which brings out some of the usual characteristics of the object observed by means of the usually toned-down or moderate lighting which travels directly into the objective from another source of light than *B*; and secondly from the most intense light from *B*, which does not, as hereafter explained, enter into the objective but only to the extent that an object placed at *G* deviates it towards the objective, and thus, with extremely small objects placed at *G*, the use of extremely intense light becomes practicable without inconveniencing the eye, as would be done by light coming directly from the sub-stage and unavoidably going into the objective.

Thus directed, however, the fullest intensity of the strongest lighting

which according to the usual way would have to be either toned-down and thereby cause extremely small objects to become invisible, or which would be intolerably blinding to the eyes, can be used with low powers without mounting or tinging the objects, and it traces in liquids extremely small free objects under nature's own circumstances of absolute freedom and absence of chemical preparations.

By the use of low or medium power objectives—thereby obviating the great amplification of the auto-motivity of the radical units which causes them to immediately get out of focus and out of the field with the hitherto suitable high powers to such minute objects—they are kept quite distinct and even brilliantly visible by the compensating increment of extra intense lighting; considerate observations of unmounted highly motile units become relatively easy; and it permits of witnessing the conservation of the volitional perpetual potential (Vitivity) effects, after exposure of these units to white heat, through thereafter yet evincing the same effects and auto-motivity characteristics, accompanied by the same special internal rapid twinking function of indeterminable capricious occurrence.

This improvement in the scope of the view of *free* microscopic matter in sizes nearing the limit of refrangibility of light by solid matter or at the very threshold of invisibility, facilitates many new sets of experiments and permits of a much closer approach to a radical view of the constitution and intrinsic properties of matter, in general directly demonstrating that there is no ultimately inanimate matter, but actually two phases of life conditions, the static and dynamic ones.

It throws new light on many obscure points of several branches of science, by revealing the enormous capabilities of microscopic state of matter on its being made to reach the condition of free centres, then visibly exhibiting themselves as the source of physical perpetual motion—Radium may be an example of it, much condensed at a point.

Without the above described optical combination of both lightings' illumintion herein styled "Duplex lighting," the above are either not traceable or not comprehensible, as the view or representation given exclusively by each class of lighting, differs radically from each other, and complementation is necessary to see either all, or most of what there is actually present and functioning, to exhibit sufficiently and demonstrate the radical vital capabilities that are always latent in all ponderable matter. The useful partial lighting by each is of an unknown proportion, but it is easily traceable by trial, increasing the one and diminishing the other, or *vice versa*, jointly using them to fully identify any one, or a group of a few of those free moving vital centres.

The one-inch ordinary objective is sufficient to first unmistakably trace these units in ordinary drinking filtered water, using only the novel over-stage lighting, they being then untraceable by the sub-stage lighting with such low power. The ordinary quarter-inch objective and upwards, to the $\frac{1}{8}$ inch objective, is the grade of amplification from which duplex lighting more properly becomes useful.

The relative suitable amount of either or both classes joint lighting or alternately of each separately, is best obtained or regulated by iris diaphragms set on the path of each system of lighting.

A special object holder *I* has to be used with this arrangement. It is composed of a piece of well polished glass plate about $\frac{3}{16}$ of an inch thick, about 1" broad, and about $3\frac{1}{2}$ " to 4" long. The end of it is bevelled off at somewhat more than the total angle of reflection of light by glass ($41^{\circ} 48'$) i.e., to about 55° and very finely polished. The light that passes through

the holder from the sub-stage condenser *K*, falling normally on both of its parallel faces, when it is laid flat on the stage, is not any ways affected by it in its course towards the objective.

But the light from *B'* being made to fall nearly normally on the bevelled end surface, penetrates into the object holder, meets the lower face at an angle of total reflection and is therefore reflected towards the top face which it meets at the same angle, and is therefore again reflected, and so on from face to face without any practical amount of light being refracted out of the object holder, but only at its other end, if the angle of first incidence is increased somewhat over $41^{\circ} 48'$ or practically to 55° degrees, by lowering a little the arm *A*. The more suitable angle and position of the light *B* on the arm is best ascertained by trial. If there be two arms as *A* set to one microscope, the object holder has to be bevelled on the two sides, or to be made half circular ended to the same bevel, if several be required to be set up for yet more intense light. In this case, an athermanous substance (a glass cell filled with water being the simplest and best) is placed in front of each of the condensers. The object holder has also in such case to be placed at right-angles to the usual position on the stage. The insertion of this object holder in the path of light from *B'* scarcely alters the above described optical disposition, and only inverts the direction of the rays, on the holder's bevelled edge being placed a little in advance of the objective's axis towards the light source as shown at *u*, so as to catch up the condenser's rays before they proceed further down; and it also raises the height of focus above the stage *H*.

The object to be observed has to be placed in an ordinary, but very shallow cupped slide filled with any required (but of the least viscous) liquids, such as water, for organic radical vital matter observations, or nitric acid to carry out the experiments demonstrating the vital potential (Vitivity) permanency in the strongest acids. And all liquids placed in the cup must be covered with a very thin glass-cover, not only to prevent evaporation, but also as being essential to reproduce in the slide itself, the optical requirements of internal reflection above described for the object holder. This is effected by a drop of water or oil being placed between the object holder and the slide, to secure immersion contact continuity from the glass slide to the object holder. In this manner the glass slide and cover becoming as if of one piece with the object holder, the intense light from *B'* after the first reflection from the lower face of the holder, comes across the minute objects and is thereby deviated out of its internal regular reflections in the slide and in the object holder, only to the extent that is caught up by that object; and therefore, as it no longer follows the path that just kept it within the angle of total reflection within the object holder, it passes out and becomes visible in the objective set to focus above it, precisely to the greatest extent possible, or comfortably tolerable by the eye.

Such illumination is, when intensest, almost exclusively suitable to any but ante-bacterial observations of living functions of the ultimate vital potential traceable in solid matter reduced to the most minute condition attainable by prolonged grinding (either before or after calcination) by an agate pestle and mortar of high polish.

No "immersion" between the object and objective is practicable with this system of lighting from the intense light *B'* which, on penetrating into an immersion objective, would confuse all into a blaze of lighting. Also low-power objectives from 1" focal length upwards, or medium power ones up to $\frac{1}{2}$ inch objectives are best suited to this system of microscopical observation.

Our Library Table.

I.

Brahmans, Theists and Muslims.—By J. C. OMAN. T. Fisher Unwin.

Mr. Oman is specially well-fitted for the task he has undertaken, *viz.*, to present a picture of the Indian life as it is. He has lived long enough in India to know the people and know them well, but it is always a difficult task for an outsider to describe the real life of a foreign people however intimate may be his connexion or however long may be his stay with them. He would necessarily miss those subtle forces, those small social functions, those half religious and superstitious practices which really reflect the life and the peculiarities of each individual nation. To put it in other words, it is almost impossible for a foreigner in dealing with the Eastern life to go beyond the surface, but in spite of the shortcomings of this most admirable book we cannot but congratulate Mr. Oman on his achievements. He has admirably described the religious life of the people, and in dealing with his subject has shown an interest and sympathy which cannot fail to make his book popular with the people out here. He has given a most illuminating and exhaustive account of the *Brahmo Somaj movement* and the *Moharram* festival. But though he is full and thorough in his treatment of the *Hindu* social and religious life, he is somewhat brief and sketchy as regards his account of the *Mohamedans*. He has completely ignored the religious, social and intellectual movements, which, of late, have stirred the *Mohamedan* community to its depth. One word and we have done. The publishers deserve credit for the excellent get-up of the book.

II.

The Inward Light.—By FIELDING HALL. Macmillan & Co.

This is a most fascinating book and deserves the attention of all interested in Eastern religions. Mr. Hall writes with an intimate knowledge of his subject and evinces great sympathy with the *Burmese* and their religious thoughts and ideals. The book lying before us is an exposition of *Buddhism*, as it is illustrated by the life of the *Burmese*; but Mr. Hall, unlike the majority of the Western writers, does not give us merely a dry account of the *Buddhistic* teachings, but explains to us how those teachings affect the daily life of its professors, and points out to us that they are not only a formal belief but a vital and living thing influencing the people through and through in their conception of life, its sore trials and its bitter disappointments, and bringing to them consolation and happiness scarcely to be imagined by those who have not lived and moved with them. Mr. Hall has admirably succeeded in bringing home to the reader the real and genuine spirit of *Buddhism*, and we have no hesitation in ascribing the success of the book to the author's large-mindedness and conspicuous

freedom from prejudice. He very truly says that the essence of all religions is the same, and the same truths are to be found all over the world in every religious system. Buddha did not come, says he, to denounce the world or to rob it of happiness, but to add another world, to add a higher, more enduring happiness to that which passes so quickly from us. He came not to displace one truth with another, but to perfect truth with truth, joy with joy, to round our fleeting time with an eternity. And, therefore, Buddhism is nothing by itself. It is not, it never pretended to be a complete truth, to be a temple in itself. It was but another story added to that great building whose feet are in the earth, whose summit rises towards heaven.

III.

Three Chief Cities of the Egyptian Sultans.—By PROF. MARGOLIOUTH.
Chatto and Windus.

Prof. Margoliouth is a recognized authority on Islamic subjects, and whatever comes from his pen bears the hall-mark of sound erudition and scholarship. But the work lying before us is meant more for the masses than for the limited circle of scholars. Prof. Margoliouth tell us the history of the changes and vicissitudes which overtook the three principal cities of Islam—Damascus, Cairo and Jerusalem—and describes to us the important historical buildings which these venerable cities once owned, and some of which have survived the tide of time. To go into details would mean writing a monograph on this most fascinating book. Suffice it to say that it is a book which, of necessity, will find a place in all libraries and on the shelf of every student and scholar interested in the history and antiquity of Islam. The plates considerably enhance the value of the book, and the excellent type and the paper make it attractive and alluring.

